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PART A

IONOSPHERIC DATA

ISSUED
JANUARY 1962

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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CRPL-F 209
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
22 Jan. 1962

IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with CRPL-F188, Part A, issued April 1960, the count is given for foF2 in the tables of medians. It is regretted that space limitations prevent including detailed counts for other characteristics.

To indicate further in a general manner the relative reliability of the data, for the F2 layer, h'F or foEs, if the count is from five to nine, or, for all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is enclosed in parentheses. Medians are computed for less than five values for foF2 only.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

There is no indication on the graphs of the relative reliability of the observed data; it is necessary to consult the tables for such information.

The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

The latest available information follows concerning the smoothed observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1960.

Smoothed Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	146	141	137	132
1960	129	125	122	120	117	114	108	102	97	93	87	83
1961	79	74	68	63	59	54						

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 60 and figures 1 to 120 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
- Brisbane, Australia
- Hobart, Tasmania
- Townsville, Australia

Australian Department of National Development, Bureau of Mineral Resources, Geology and Geophysics:
- Mundaring, Western Australia

University of Graz:
- Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
- Bunia, Belgian Congo
- Elisabethville, Belgian Congo
- Leopoldville, Belgian Congo

Belgian Royal Meteorological Institute:
- Dourbes, Belgium

Universidad Mayor de San Andres:
- La Paz, Bolivia

British Department of Scientific and Industrial Research, Radio Research Board:
- Falkland Is.
- Inverness, Scotland
- Slough, England

Defence Research Board, Canada:
- Churchill, Canada
- Ottawa, Canada
- Resolute Bay, Canada
- St. John's, Newfoundland
- Winnipeg, Canada

Universidad de Concepcion:
- Concepcion, Chile

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

Czechoslovak Academy of Sciences:
Pruhonice, Czechoslovakia

General Direction of Posts and Telegraphs, Helsinki, Finland:
Nurmijarvi, Finland

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

National Institute of Geophysics, City University, Rome, Italy:
Rome, Italy

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

General Directorate of Telecommunications, Mexico:
El Cerillo, Mexico

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Christchurch, New Zealand

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Tromso, Norway

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Lycksele, Sweden
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland
Sottens, Switzerland

National Bureau of Standards (Central Radio Propagation Laboratory):
Byrd Station, Antarctica
Washington, D. C.

TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by several stations associated with CRPL. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station; the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed by Dr. H. H. Howe for a CDC-1604 computer.

The tabulations provide the following basic electron density profile data for each hour of each day of the month:

Quantity	Units	Remarks
Electron Density (N)	$x10^3$ = electrons/cm^3	Body of table; given at each 10 km of height.
NMAX	$x10^3$ = electrons/cm^3	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
KP		The standard Kp magnetic index, to one digit.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
SCAT	Kilometers	One half of the half-thickness of the parabola best fitting the upper portion of the F region profile. Approximates the scale height near the level HMAX.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$x10^{10}$ = electrons/cm^2 column.	Obtained by integration of the profile between the limits HMIN and HMAX.

Tabulations of the average electron densities each hour, at each 10 km level, for the quiet ionosphere, are also given. These averages include the profiles obtained when the magnetic character figure Kp is 4+ or less. The number of profiles entering the average for each hour is given by CNT. The other parameters of the layer, HMIN, SCAT, HMAX, SHMAX, and the mean value of Kp are given for each hour.

Before the averaging process, the individual profiles are extrapolated above HMAX by a Chapman distribution of 100 km scale height. This assumed model seems to agree well with the few published measurements dealing with the topside profile of the F-region.* Extrapolation is necessary in order to calculate homogeneous averages near HMAX and the average profiles are, in fact, given up to 950 km. Also given are the average estimated integrated electron densities to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

*See Wright, J. W. "A Model of the F-Region Above HMAX F2" J.Geophys.Res. V.65, pp.185-191.

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 1 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O,KD	5	5	4	4	4	F4	F4	A4	A2	2	B2	3
HMIN	269	232	215	238	249	253				109		109
SCAT	42.1	39.5	34.2	41.0	43.9	38.6				27.2		55.6
HMAXF	363	309	280	322	354	341				236		298
SHMAX	181	167	94	98	87	78				348		692
KM												
370	310											
360	310				136							
350	303				136	135						
340	287				132	135						
330	262			179	126	132						
320	230			179	115	125						
310	190	338		175	101	113						
300	144	334		166	83.8	99.9						621
290	89.7	319		152	66.2	84.7						619
280	47.1	294	224	133	50.5	67.6						606
270	12.4	250	219	107	36.6	47.1						583
260		190	206	74.4	24.0	23.8						549
250		110	181	39.9	4.3							508
240		40.2	136	12.4						556		463
230			70.2							552		419
220			28.6							516		378
210										440		345
200										349		320
190										283		301
180										249		284
170										229		269
160										210		254
150										190		235
140										167		211
130										150		180
120										125		165
110										27.2		59.7

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 1 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O,KD	3	3	4	4	4	A4	A4	A4	A2	A2	A2	A2
HMIN	109	108	110	108	106				235	237		239
SCAT	53.6	50.8	54.7	43.9	46.2				46.2	37.7		46.3
HMAXF	298	303	323	301	291				344	341		350
SHMAX	800	772	945	968	871				325	262		257
KM												
360												392
350									512	471		392
340									511	471		387
330			890						500	462		373
320			889						477	436		351
310		751	877	1184					443	394		318
300	782	750	849	1184	1126				395	338		277
290	778	738	805	1164	1125				335	272		229
280	759	703	749	1114	1109				262	197		178
270	727	668	682	1031	1066				188	126		125
260	681	623	608	918	999				110	74.8		77.1
250	622	560	525	780	895				55.5	41.0		41.2
240	555	490	448	631	755				21.4	16.0		12.4
230	486	423	388	496	588							
220	419	368	344	392	431							
210	369	330	315	327	329							
200	335	307	296	292	274							
190	310	292	282	272	248							
180	293	280	271	259	232							
170	278	268	254	245	216							
160	262	254	235	230	200							
150	242	236	217	207	176							
140	217	211	196	184	154							
130	187	184	175	164	137							
120	167	163	161	152	127							
110	41.7	38.1	12.4	73.8	72.1							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 2 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O,KD	2	2	3	3	3	4	54	4	3	B3	B3	A3
HMIN	230	216	219	239	218	225		109	109	110		
SCAT	46.9	33.8	54.6	42.2	33.6	32.3		41.8	33.8	37.2		
HMAXF	344	317	324	332	299	296		256	255	253		
SHMAX	260	179	214	139	108	79		279	385	425		
KM												
350	398											
340	397			243								
330	389		310	243								
320	370	329	310	238								
310	345	326	305	226								
300	312	306	295	208	226	179						
290	267	278	281	181	221	178						
280	216	241	260	146	207	168						
270	162	197	228	105	182	150						
260	99.7	149	190	67.1	147	122		390	594	567		
250	57.8	104	148	36.8	110	86.6		388	591	566		
240	30.8	67.9	96.6	4.7	68.0	49.2		376	566	548		
230		40.8	51.5		37.2	21.2		352	514	511		
220		18.4	12.4		12.4			317	433	451		
210								270	335	374		
200								222	264	316		
190								179	224	278		
180								145	195	252		
170								118	169	231		
160								96.3	142	208		
150								80.6	118	179		
140								70.0	102	149		
130								62.9	94.9	127		
120								59.5	91.1	117		
110								21.8	29.7	12.4		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 2 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O,KD	A3	A3	A1	A1	A1	A3	A3	A3	A3	A3	F3	F4
HMIN									199	229		294
SCAT									43.6	44.0		32.5
HMAXF									304	324		381
SHMAX									328	275		223
KM												
390												459
380												459
370												446
360												411
350												363
340												306
330										469		228
320										468		132
310									524	457		68.0
300									523	439		30.0
290									511	397		
280									482	350		
270									447	291		
260									400	210		
250									342	113		
240									272	49.7		
230									197	12.4		
220									120			
210									55.2			
200									12.4			

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 3 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	F4	F4	A3	A3	A3	3	S3	B3	1	A1	A1	2
HMIN	249	249	212	220	217	249	112		108			108
SCAT	33.2	36.1	36.5	33.1	46.4	34.1	38.6		64.7			58.0
HMAXF	398	334	307	288	322	329	259		267			296
SHMAX	203	205	203	147	154	113	153		517			765
KM												
340		401										
330	450	400			332	224						
320	443	387			332	220						
310	416	358	392		228	206						
300	368	317	389		219	183						707
290	300	264	371	342	204	156						705
280	190	199	339	336	186	126						693
270	98.1	119	293	316	164	88.6			567			671
260	47.8	56.3	231	279	139	50.0	247		565			640
250	12.4	12.4	157	220	111	12.4	244		567			595
240			94.3	143	79.2		233		542			542
230			52.9	61.0	47.9		213		520			485
220			26.7	.4	16.2		187		491			429
210							152		457			381
200							115		414			343
190							83.2		354			317
180							59.5		284			296
170							42.4		218			280
160							30.8		175			264
150							23.3		144			246
140							20.2		115			223
130							19.0		93.8			196
120							17.3		84.5			171
110									39.4			115

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 3 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	2	2	2	2	A2	A1	B1	S1	1	A1	1	1
HMIN	105	108	108	108					200		249	217
SCAT	51.4	68.0	45.7	46.1					60.2		46.0	47.9
HMAXF	295	338	319	321					296		349	353
SHMAX	947	1211	1043	1122					315		161	171
KM												
360												
350												229
340		1060									257	229
330		1057		1240							254	224
320		1043	1131	1240							246	214
310		1017	1120	1221							231	200
300	1022	977	1082	1173							212	183
290	1019	932	1015	1095					428		185	161
280	1000	869	926	991					427		151	137
270	961	791	820	872					420		115	113
260	901	700	706	743					408		75.2	90.5
250	827	600	594	622					388		40.9	69.9
240	736	507	489	510					365		12.4	52.3
230	638	435	412	418					334			38.2
220	538	383	362	357					291			25.9
210	435	349	333	318					240			12.4
200	359	325	315	295					177			
190	321	306	296	279					49.4			
180	306	287	277	265								
170	278	267	260	251								
160	264	248	235	237								
150	248	220	196	220								
140	214	176	164	192								
130	182	159	151	163								
120	163	151	145	151								
110	146	43.7	81.2	49.0								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 4 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	1	N1	2	2	2	2	S2	B2	A2	A2	2	0
HMIN	279		250	220	208	240				111	107	108
SCAT	44.3		36.8	35.0	53.0	50.0				50.7	73.5	79.9
HMAXF	372		322	294	310	328				263	276	300
SHMAX	148		138	109	116	96				522	624	714
KM												
380	347											
370	347											
360	343											
350	332											
340	314											
330	192		296			161						
320	164		296		175	160						
310	128		280		175	156						
300	78.0		270	236	174	149						556
290	41.8		230	235	169	138						556
280	12.4		188	226	162	120						554
270			127	208	150	94.3					567	547
260			60.6	175	132	60.9				619	566	536
250				131	109	33.5				618	560	521
240				82.7	81.1					608	549	498
230				40.9	53.8					586	532	476
220				3.1	31.8					552	506	451
210					12.4					504	482	421
200										438	455	391
190										372	423	362
180										320	384	335
170										281	336	312
160										248	295	292
150										214	261	273
140										180	226	253
130										152	203	223
120										135	175	185
110										120	151	165
											56.6	43.7

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 4 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	0	0	0	0	0	2	2	2	4	4	4	N3
HMIN	107	108	109	109	111	108	110	189	189	238	272	276
SCAT	44.3	53.5	58.6	61.0	45.3	46.0	34.7	42.8	54.4	41.9	38.3	46.4
HMAXF	287	306	315	332	320	303	268	264	304	352	349	378
SHMAX	691	911	1014	1101	981	1108	798	442	316	201	156	175
KM												
380												
370												279
360												277
350										310		269
340				1022						310	306	253
330				1022						304	302	233
320			976	1013	1173					289	287	207
310		890	974	990	1159	1547				265	262	173
300		887	961	953	1116	1545			422	237	230	127
290	707	869	933	901	1042	1513			421	204	183	78.0
280	702	836	889	837	946	1446			415	169	126	43.9
270	680	789	835	755	817	1344	1635	858	401	131	50.4	18.4
260	639	723	762	661	667	1185	1611	855	380	95.3		
250	583	647	677	566	529	951	1520	833	351	60.7		
240	516	566	584	476	417	691	1362	791	314	34.2		
230	451	486	493	405	337	498	1072	723	270	12.4		
220	395	416	414	356	294	366	637	618	226			
210	354	362	356	323	268	289	359	455	181			
200	328	330	323	302	250	247	205	212	128			
190	314	310	300	288	237	221	144	81.3	33.0	23.8		
180	306	296	284	273	226	201	115					
170	299	285	271	255	216	181	93.0					
160	282	273	257	233	191	159	75.9					
150	250	258	241	208	156	136	63.5					
140	214	232	217	185	137	115	56.7					
130	191	197	192	167	128	103	53.6					
120	180	174	162	157	96.6	96.5	51.7					
110	68.5	59.9	41.7	33.0		28.9						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 5 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	3	3	3	3	3	A1	A1	A1	A2	A2	2	A2
HMIN	279	229	203	199	270						106	
SCAT	44.5	30.3	38.9	34.6	49.3						68.9	
HMAXF	373	312	300	271	346						288	
SHMAX	171	136	157	99	96						658	
KM												
380	284											
370	284											
360	278											
350	264				163							
340	244				163							
330	216				159							
320	181	291			152							
310	137	290			142							
300	94.2	280	283		127							
290	46.8	252	278		105						580	
280	12.4	217	264	210	76.2						578	
270		174	241	210	12.4						570	
260		121	208	204							556	
250		72.1	169	190							537	
240		36.4	125	168							509	
230		4.7	79.9	137							476	
220			48.0	98.0							437	
210			24.2	58.8							399	
200				12.4							365	
190											337	
180											314	
170											290	
160											259	
150											222	
140											176	
130											144	
120											134	
110											122	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 5 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	2	B2	B3	3	3	A3	A3	A3	A1	1	1	3
HMIN	109			109	107			209	200	199	237	239
SCAT	60.1			54.2	37.2			31.6	38.5	47.9	47.8	41.8
HMAXF	325			314	293			280	277	332	341	337
SHMAX	1134			1178	958			494	331	347	245	185
KM												
350											374	
340										465	374	311
330	1022									465	369	309
320	1021			1281						458	356	299
310	1007			1279						441	334	279
300	979			1258	1379					413	305	251
290	933			1217	1377					378	266	213
280	880			1153	1338			1179	645	335	220	171
270	817			1067	1245			1151	640	289	170	128
260	746			954	1116			1064	615	242	117	84.4
250	664			816	944			917	567	194	68.7	43.0
240	580			672	751			700	502	151	29.7	12.4
230	501			544	565			498	413	114		
220	432			439	415			327	298	81.9		
210	382			367	329			241	146	52.5		
200	368			317	285				12.4	17.4		
190	424			291	258							
180	508			271	238							
170	596			252	217							
160	683			234	192							
150	762			217	168							
140	731			199	145							
130	595			167	132							
120	172			151	126							
110	37.2			33.1	40.1							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	3	S3	1	1	1	1	S1	1	1	1	1	1
HMIN	249	266	279	279	230	200		109	108	107	110	110
SCAT	40.7	40.0	39.7	37.4	30.1	36.4		41.8	37.9	49.3	47.3	59.3
HMAXF	345	352	362	350	285	262		241	244	266	275	320
SHMAX	161	157	141	122	119	93		256	408	592	656	985
KM												
370			250									
360		284	259									
350	281	284	263	247								
340	281	277	230	243								
330	273	262	217	230								882
320	256	238	180	208								876
310	230	208	153	177								858
300	195	170	110	140								827
290	152	120	61.7	85.4	311						723	785
280	110	65.8	12.4	12.4	309						721	728
270	72.8	25.0			292	206				714	704	666
260	40.4				258	206				711	694	667
250	12.4				199	200		390	633	694	684	698
240					110	187		390	631	663	622	530
230					12.4	166		383	612	619	564	468
220						136		365	571	555	501	416
210						87.2		336	505	476	441	375
200						12.4		291	410	393	390	346
190								230	313	329	347	324
180								178	248	283	312	306
170								138	207	248	284	288
160								108	174	219	256	270
150								85.5	146	191	226	245
140								69.6	123	163	189	212
130								63.3	109	136	158	175
120								52.8	78.6	121	138	143
110								12.4	20.5	39.4	12.4	12.4

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	1	1	0	0	0	0	0	0	1	1	1	1
HMIN	108	109	109	108	109	109	108	200	200	200	198	280
SCAT	60.0	50.6	52.7	56.0	43.9	39.1	39.1	36.1	29.3	52.9	58.7	43.0
HMAXF	326	327	325	323	310	297	292	271	262	314	338	360
SHMAX	1187	1186	1250	1221	1133	1075	1017	684	317	273	209	110
KM												
360												197
350												194
340											247	186
330	1121	1168	1298	1240							246	173
320	1118	1163	1296	1239	1424					358	241	154
310	1101	1136	1273	1222	1424					357	233	129
300	1069	1086	1226	1186	1405	1561	1712			351	220	96.9
290	1019	1010	1156	1126	1349	1547	1711			339	205	62.3
280	957	921	1063	1053	1255	1484	1674	1561		320	186	12.4
270	876	821	949	959	1128	1364	1581	1561	854	296	164	
260	784	721	821	848	974	1213	1432	1525	852	267	141	
250	683	623	691	729	800	1006	1212	1429	815	234	117	
240	579	531	575	611	630	764	926	1271	728	200	92.5	
230	488	460	475	501	485	565	615	983	575	166	68.7	
220	418	407	403	412	380	428	390	543	314	131	48.4	
210	370	370	357	354	319	336	257	151	98.2	91.2	31.0	
200	339	345	327	318	285	280	188	12.4	12.4	12.4	12.4	
190	319	327	306	294	263	244	149					
180	303	309	285	275	245	219	125					
170	287	290	262	258	228	198	106					
160	266	270	236	238	208	177	89.2					
150	226	242	215	212	180	155	76.1					
140	197	211	198	187	154	133	67.2					
130	185	195	186	169	138	117	62.4					
120	168	179	174	159	132	100	59.9					
110	36.7	29.7	33.5	54.3	33.3	33.1	28.0					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 7 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O,KD	F1	F1	1	1	1	1	S1	A1	A0	0	0	1
HMIN	279	280	326	300	259	249				108	109	109
SCAT	37.7	41.5	32.2	38.6	44.4	40.2				39.6	52.9	54.8
HMAXF	362	355	298	263	335	319				270	299	302
SHMAX	110	124	110	74	77	71				610	936	1007
KM												
370	305											
360	305	226										
350	309	225										
340	186	218				141						
330	147	203				141						
320	144	185				137	141					
310	118	164				130	139					1051
300	83.3	135	240			119	133				958	1050
290	44.0	91.6	236			102	122				951	1039
280	12.4	12.4	219			79.3	106				928	1010
270			195	163	51.8	84.5				754	881	960
260			162	163	17.4	54.8				743	828	900
250			121	159		17.4				705	760	822
240			65.2	149						649	680	726
230			24.1	134						574	595	621
220				106						495	514	525
210				62.4						424	442	439
200				.4						366	387	377
190										327	347	336
180										297	316	307
170										267	288	280
160										236	261	252
150										203	233	221
140										173	205	194
130										147	174	175
120										127	153	165
110										30.1	41.7	39.4

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 7 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O,KD	1	1	1	S1	S1	1	1	S1	0	0	0	1
HMIN	109	109	108	107	109	108	107		183	219	259	279
SCAT	50.2	47.0	58.7	51.9	49.8	39.3	31.4		37.7	49.7	43.7	46.1
HMAXF	308	303	317	335	308	290	275		267	340	358	382
SHMAX	1060	1107	1229	1235	1155	1026	761		315	245	191	198
KM												
390												311
380												311
370												306
360											310	294
350										329	307	275
340										329	296	248
330				1275						326	277	211
320			1229	1272						316	251	169
310	1080	1234	1219	1249	1398					298	218	127
300	1074	1233	1198	1203	1389					275	179	86.6
290	1046	1210	1159	1136	1353	1512				248	135	46.1
280	997	1160	1102	1039	1286	1489	1424			218	90.7	12.4
270	926	1080	1028	930	1196	1409	1416		599	186	47.1	
260	840	978	930	806	1070	1298	1347		593	154	12.4	
250	745	857	813	676	909	1142	1204		562	122		
240	653	729	696	560	725	944	1016		520	84.6		
230	561	605	579	465	558	713	785		459	44.0		
220	478	501	473	397	427	520	550		377	12.4		
210	419	419	401	353	341	377	362		278			
200	375	369	356	325	295	291	225		173			
190	346	336	327	306	268	244	161		49.9			
180	324	313	307	290	249	216	127					
170	306	295	290	272	234	194	104					
160	288	278	273	248	213	173	88.4					
150	259	260	248	229	182	152	74.9					
140	223	232	218	208	154	132	63.7					
130	193	198	191	180	139	114	57.2					
120	176	183	175	162	131	106	54.2					
110	59.7	48.7	97.2	134	27.2	78.2	43.3					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 8 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O,KD	N1	1	1	1	1	1	S1	A1	1	A1	A1	1
HMIN		237	211	199	209	207			108	108		109
SCAT		40.8	30.2	29.7	41.2	40.4			43.7	59.8		59.7
HMAXF		321	278	262	277	296			253	281		322
SHMAX		201	144	103	75	61			415	665		1018
KM												
330		389										898
320		389										898
310		382										889
300		364				107						867
290		336				106				681		832
280		282	363		144	102				681		785
270		217	356	259	143	95.1				676		727
260		130	328	259	139	85.6			529	661		665
250		63.2	282	248	129	73.2			528	636		596
240		20.7	205	223	116	58.4			516	605		527
230			107	178	95.9	42.5			491	557		466
220			43.4	125	68.2	28.0			451	497		414
210				60.7	34.1	12.4			405	436		379
200				12.4					360	383		360
190									317	340		343
180									273	305		324
170									227	272		303
160									181	235		279
150									143	198		248
140									112	156		210
130									101	130		185
120									95.6	117		116
110									38.6	43.7		12.4

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 8 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O,KD	B1	B1	1	A1	A1	A1	A1	B1	A1	A1	A1	A1
HMIN			108					218	200	201	239	297
SCAT			53.5					45.6	42.7	50.0	56.4	46.0
HMAXF			308					309	278	289	361	386
SHMAX			1228					642	504	337	282	225
KM												
390												374
380												373
370											371	364
360											371	345
350											368	318
340											358	283
330											342	237
320											321	181
310			1293					1095			294	101
300			1286					1084			260	25.5
290			1257					1048		567	221	
280			1206					984	1013	562	178	
270			1133					892	1004	546	129	
260			1038					772	968	517	79.0	
250			925					610	906	479	41.8	
240			800					410	801	422	12.4	
230			678					175	615	334		
220			563					30.1	333	205		
210			465						107	64.1		
200			401						12.4			
190			360									
180			329									
170			301									
160			277									
150			255									
140			226									
130			199									
120			183									
110			54.3									

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 9 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	F1	F1	A3	A3	A3	F4	S4	A4	A1	1	A1	A1
HMIN	289	261	199	199	228	229			108	109		
SCAT	39.8	41.7	38.9	40.0	44.1	39.9			47.1	40.4		
HMAXF	383	341	272	279	322	309			265	277		
SHMAX	246	237	194	131	110	106			504	674		
KM												
390	444											
380	443											
370	432											
360	405											
350	369	440										
340	319	440										
330	258	432				184						
320	179	409				184						
310	94.9	379				181	202					
300	42.5	335				173	199					
290	12.4	277				159	190					
280		191	411	254		142	175			858		
270		78.3	410	251	120	150			666	852		
260			401	240	90.7	120			664	821		
250			378	222	61.4	83.4			650	765		
240			341	194	36.3	42.5			621	682		
230			277	151	12.4	12.4			577	586		
220			173	99.3					508	500		
210			68.8	49.9					423	426		
200			12.4	12.4					344	363		
190									278	311		
180									225	268		
170									182	229		
160									141	190		
150									112	153		
140									103	139		
130									98.1	131		
120									95.3	126		
110									53.9	41.7		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 9 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	A1	A1	A1	A1	A1	A2	A2	A2	3	3	F3	F1
HMIN									200	249	287	
SCAT									58.4	49.3	44.4	
HMAXF									316	366	384	
SHMAX									381	312	277	
KM												
390											442	
380											441	
370										448	431	
360										447	407	
350										437	377	
340										418	339	
330										389	292	
320									489	354	234	
310									488	310	174	
300									480	257	99.7	
290									466	199	26.0	
280									442	144		
270									414	84.5		
260									381	43.6		
250									339	12.4		
240									291			
230									232			
220									161			
210									79.5			
200									12.4			

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 10 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	F1	F1	1	A1	A1	2	S2	2	2	2	2	2
HMIN		245	209	200	219	228		107	109	109	109	108
SCAT		34.1	34.4	33.6	50.4	52.1		36.5	36.8	46.3	47.9	53.0
HMAXF		323	286	267	324	326		260	254	259	287	301
SHMAX		257	334	163	145	111		372	514	600	910	1084
KM												
330		541			215	171						
320		540			215	171						
310		521			211	167						1131
300		477			203	160						1131
290		415	747		191	151					1060	1119
280		335	741		174	136					1054	1087
270		231	707	364	151	114		567			1026	1035
260		116	641	361	121	86.7		567	782	775	974	961
250		36.5	538	342	90.5	59.0		556	780	768	900	870
240			382	306	63.5	34.5		524	755	743	797	767
230			184	253	38.0	12.4		470	701	697	675	666
220			63.9	187	12.4			391	617	638	551	570
210			12.4	107				313	503	559	449	483
200				12.4				247	399	461	382	413
190								197	322	376	340	365
180								160	265	311	311	332
170								131	218	264	288	307
160								109	178	225	264	283
150								91.6	143	188	237	256
140								79.3	124	152	204	228
130								73.6	116	137	169	198
120								60.0	100	131	154	175
110								24.0	25.1	39.4	124	62.7

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 10 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	2	2	2	2	B2	2	S2	2	1	1	1	2
HMIN	109	108	109	108		108	109	200	198	237	258	279
SCAT	47.4	48.5	55.1	43.3		47.5	36.2	40.8	35.5	43.3	54.9	38.2
HMAXF	318	306	337	321		294	280	281	313	339	375	366
SHMAX	1377	1392	1612	1548		1388	874	593	381	376	393	261
KM												
380											539	
370											538	494
360											529	491
350											511	473
340			1605							621	485	437
330			1598	1965						615	449	389
320	1505		1565	1965					657	592	399	324
310	1493	1635	1506	1935					655	551	340	240
300	1447	1628	1416	1853		1860			634	496	278	147
290	1366	1590	1313	1718		1857		1131	582	425	205	69.8
280	1259	1517	1180	1520		1822	1561	1131	523	337	132	12.4
270	1124	1410	1032	1288		1745	1532	1111	451	245	66.8	
260	975	1264	884	1045		1625	1444	1057	368	156	18.4	
250	828	1083	762	817		1468	1296	971	280	81.1		
240	693	886	670	620		1256	1087	842	191	25.1		
230	578	706	578	489		1003	823	673	118			
220	488	561	495	405		753	552	472	71.0			
210	429	458	405	356		559	343	171	38.9			
200	388	393	371	325		406	207	12.4	12.4			
190	357	354	348	304		316	144					
180	331	327	327	289		260	114					
170	308	307	306	275		225	93.7					
160	285	288	282	258		198	80.0					
150	259	265	250	239		176	69.8					
140	227	231	212	212		156	63.5					
130	193	206	184	180		141	60.8					
120	175	181	173	160		133	56.6					
110	41.7	115	93.5	81.4		62.7	22.1					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 11 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	2	2	1	1	1	52	52	52	52	52	2	3
HMIN	245	245	257	211	208	199				108	108	107
SCAT	40.0	36.9	49.2	36.1	51.6	38.5				48.8	78.1	62.3
HMAXF	348	332	351	300	307	287				253	282	316
SHMAX	311	275	352	225	250	209				512	678	935
KM												
360			554									
350	510		554									
340	514	522	547									
330	488	521	529									
320	455	507	498									801
310	411	470	457	436	389							799
300	358	424	403	436	387							788
290	293	365	336	427	379	374					585	766
280	220	288	249	399	363	371					585	734
270	134	189	137	360	342	355					582	692
260	67.6	98.5	35.3	305	308	326				621	573	640
250	27.7	30.8		240	262	288				621	560	579
240				165	201	243				611	542	518
230				81.7	127	193				587	518	461
220				38.9	59.7	137				552	492	413
210					17.2	71.6				500	462	376
200						12.4				432	427	350
190										369	389	331
180										319	349	316
170										278	312	302
160										243	277	287
150										211	245	266
140										182	211	233
130										149	181	190
120										132	159	173
110										92.7	103	68.5

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 11 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	3	3	3	3	3	4	4	4	2	2	2	4
HMIN	107	108	108	108	105	107	108	203	200	228	250	221
SCAT	46.6	43.5	47.1	60.7	51.9	45.8	42.2	69.6	48.3	46.0	35.4	43.3
HMAXF	303	290	306	337	324	306	283	332	323	355	329	326
SHMAX	1133	1158	1183	1363	1258	1150	846	795	467	341	224	258
KM												
360												
350										494		
340										492		
330				1298				883		481		
320				1294	1404			882	651	458	450	430
310	1292		1298	1272	1402			876	650	423	443	428
300	1291		1293	1233	1377	1533		861	639	380	418	415
290	1267	1491	1261	1175	1326	1525		836	613	328	375	390
280	1213	1479	1199	1102	1249	1484	1417	799	573	273	318	355
270	1127	1415	1109	1007	1147	1402	1416	760	523	213	251	305
260	1016	1317	998	893	1021	1291	1386	709	465	157	167	247
250	874	1178	878	772	865	1143	1316	645	399	108	81.9	179
240	720	996	753	656	711	955	1208	572	324	68.2	12.4	110
230	581	799	633	560	569	747	1034	493	243	37.9		63.4
220	472	605	529	489	457	562	772	403	172	12.4		33.9
210	402	475	468	468	375	404	497	293	112			
200	360	392	391	396	289	254	192	117	64.3			
190	335	348	354	347	265	218	142		12.4			
180	319	321	326	281	244	193	114					
170	306	302	302	254	222	171	94.5					
160	292	287	277	227	196	151	79.9					
150	276	269	253	200	170	133	68.8					
140	250	243	227	174	147	116	61.2					
130	218	209	199	157	133	105	56.6					
120	184	185	177	149	124	99.1	54.4					
110	56.1	115	101	40.4	47.2	43.2	20.5					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 12 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	4	A4	A5	5	5	3	53	3	A2	2	2	1
HMIN	252	248	230	220	219	257		107	108	108	108	104
SCAT	49.5	43.2	32.3	42.1	43.9	63.3		36.7	38.1	40.6	52.3	81.3
HMAXF	345	357	298	291	305	381		249	244	237	280	350
SHMAX	225	201	165	141	116	148		283	408	397	646	1322
KM												
390						184						
380						184						
370						183						
360		325				179						
350	371	323				173						
340	370	312				165						963
330	363	292				154						959
320	348	265				137						948
310	328	228			204	118						930
300	291	186	390	281	203	95.5						905
290	241	140	384	281	198	72.9						874
280	180	96.7	359	277	187	50.6					630	833
270	102	60.1	315	265	171	30.2					630	784
260	39.1	34.4	245	245	147	12.4					624	726
250		12.4	150	212	116						606	666
240			59.4	156	77.5			491	610		573	605
230			.4	80.4	42.0			486	608	536	537	547
220				12.4	12.4			462	589	532	494	494
210								423	549	512	450	447
200								351	486	477	410	407
190								267	405	423	376	374
180								186	328	365	346	349
170								129	263	311	320	327
160								95.4	213	270	294	305
150								76.8	174	235	266	282
140								66.8	146	204	237	256
130								61.5	125	173	206	228
120								58.6	110	147	173	200
110								56.7	103	134	157	178
								23.7	38.1	101	54.3	153

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 12 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	1	1	1	1	A1	A3	A3	A3	2	2	2	2
HMIN	109	108	106	108				200	219	229	248	249
SCAT	52.2	46.2	46.7	41.2				52.4	52.1	52.1	45.3	42.0
HMAXF	308	299	298	296				292	338	348	367	359
SHMAX	1266	1228	1097	959				612	406	330	268	230
KM												
370												
360											411	
350											408	371
340										463	396	367
330									549	460	374	353
320									546	450	342	327
310	1404								533	428	298	293
300	1396	1491	1257	1141					506	402	244	251
290	1362	1477	1248	1135				985	476	367	191	203
280	1303	1429	1211	1098				985	435	322	141	156
270	1219	1342	1140	1026				972	387	268	96.3	106
260	1096	1226	1051	927				941	334	207	59.7	63.8
250	935	1065	928	813				893	277	141	34.0	34.6
240	776	889	791	688				826	210	83.2	12.4	4.7
230	635	708	660	572				730	129	42.2		
220	514	558	546	478				568	60.4	12.4		
210	429	455	452	406				347	12.4			
200	377	389	387	358				131				
190	346	350	346	327				12.4				
180	323	324	318	300								
170	306	301	295	274								
160	290	277	272	247								
150	265	252	240	219								
140	230	223	224	193								
130	192	202	196	172								
120	181	191	178	160								
110	41.7	61.1	141	81.0								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q-KP	2	2	1	1	1	1	S1	A1	A0	A0	B0	A3
HMIN	248	279	259	229	208	202			104			108
SCAT	49.8	42.2	36.6	37.3	39.5	35.6			70.9			45.6
HMAXF	371	372	349	313	296	282			283			286
SHMAX	256	208	193	184	165	123			586			890
KM												
380	366	353										
370	366	353										
360	362	346										
350	350	330	363									
340	329	304	357									
330	305	269	336									
320	272	224	306	358								
310	230	174	262	357								
300	182	126	213	347	311							
290	131	67.0	159	323	310	354			567			994
280	91.6	12.4	102	287	299	254			567			990
270	58.7		48.7	234	278	247			562			965
260	33.5		12.4	173	246	228			552			908
250	12.4			114	200	201			536			844
240				58.4	143	158			515			768
230				12.4	88.0	109			491			679
220					45.6	66.3			451			585
210					16.5	32.7			399			501
200									347			432
190									304			379
180									264			340
170									226			311
160									191			284
150									157			250
140									130			212
130									103			182
120									93.4			166
110									86.9			49.0

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q-KP	3	3	3	3	3	3	S3	S3	3	3	3	4
HMIN	109	106	107	103	107	103			230	239	259	262
SCAT	59.5	51.9	47.9	68.4	48.9	42.0			44.9	50.9	38.3	44.9
HMAXF	315	318	311	338	320	296			337	341	357	376
SHMAX	1226	1300	1257	1510	1250	1084			460	462	335	378
KM												
380												580
370												578
360											594	562
350										710	588	529
340				1360					747	710	563	489
330				1355					743	701	516	438
320	1168	1353	1424	1335	1379				721	679	454	374
310	1166	1345	1424	1301	1365				677	641	379	298
300	1148	1312	1406	1253	1323	1561			622	593	301	219
290	1115	1254	1357	1191	1245	1554			541	522	213	143
280	1062	1168	1274	1108	1157	1508			442	434	123	75.6
270	998	1062	1165	1002	1049	1412			334	318	59.6	33.6
260	916	934	1023	887	924	1281			214	190	12.4	
250	820	796	869	768	789	1095			115	79.0		
240	720	670	719	654	660	870			49.8	12.4		
230	620	555	583	552	538	652			1.7			
220	536	466	477	470	441	485						
210	452	408	409	407	371	361						
200	398	371	365	360	329	280						
190	362	346	334	325	290	235						
180	337	325	309	298	265	204						
170	320	304	284	273	241	177						
160	305	283	260	246	216	152						
150	284	263	237	218	189	131						
140	233	242	216	191	160	110						
130	190	204	190	167	139	97.3						
120	175	170	165	154	127	92.0						
110	59.7	134	130	136	99.9	62.2						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 14 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q-KP	4	4	4	4	4	4	S4	4	6	6	6	2
HMIN	249	214	220	234	199	228		115	106	109	109	108
SCAT	48.4	37.5	34.9	45.3	42.5	51.6		29.4	64.4	38.4	64.0	63.0
HMAXF	359	305	297	316	292	310		236	262	258	296	326
SHMAX	454	292	210	235	151	111		262	459	591	866	1212
KM												
360	669											
350	663											
340	643											
330	605											1070
320	560			430		185						1068
310	505	575		428		185						1054
300	440	572	450	417	258	183					808	1026
290	360	552	446	395	258	178					806	981
280	260	510	425	362	253	170					795	929
270	145	448	385	309	241	157			489		775	864
260	63.9	358	326	226	223	136			489	819	743	787
250	12.4	248	240	133	196	107			485	811	705	703
240		137	151	38.1	162	64.3		529	474	775	653	619
230		70.7	55.5		120	19.3		524	458	715	595	541
220		30.7	3.1		79.2			490	434	614	533	475
210					50.2			425	408	502	472	423
200					12.4			322	373	409	418	383
190								218	328	344	372	354
180								151	278	305	333	332
170								114	230	273	299	310
160								92.1	189	242	267	286
150								78.1	156	208	234	258
140								71.3	128	173	198	227
130								68.2	111	140	167	190
120								35.2	104	127	148	168
110									81.8	33.0	92.7	82.3

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 14 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q-KP	2	2	3	3	3	A4	A4	4	3	3	A3	1
HMIN	109	109	108	106	105	109	115	206	199	228	272	275
SCAT	83.3	52.8	45.4	46.5	50.3	34.7	34.8	62.6	48.1	46.2	43.3	37.0
HMAXF	369	341	308	304	299	294	282	310	340	332	377	370
SHMAX	1615	1624	1464	1399	1299	981	782	763	550	383	303	264
KM												
380											482	485
370	1131										479	485
360	1128										464	475
350	1117	1605									436	445
340	1098	1605							727	588	397	403
330	1070	1586							719	588	350	347
320	1035	1539						1027	696	578	294	277
310	990	1454	1792	1712				1027	654	555	226	207
300	939	1359	1777	1708	1635	1512		1020	603	515	162	131
290	885	1238	1719	1671	1621	1506	1437	1000	541	468	98.1	68.4
280	828	1100	1614	1595	1575	1449	1436	967	475	405	39.1	26.4
270	769	954	1471	1477	1496	1326	1393	919	406	336		
260	707	819	1277	1328	1386	1174	1285	861	335	260		
250	643	696	1064	1150	1229	990	1136	778	261	178		
240	579	591	862	943	1005	767	918	666	193	99.7		
230	519	509	688	755	782	568	657	526	132	28.0		
220	467	447	553	600	592	425	411	284	82.0			
210	421	403	455	478	451	327	253	75.9	43.1			
200	384	370	392	396	363	261	171		12.4			
190	352	345	352	342	309	220	129					
180	327	324	323	307	273	190	103					
170	304	305	301	279	245	163	83.3					
160	280	283	277	252	220	141	68.7					
150	252	252	249	224	197	122	59.1					
140	221	218	214	193	172	105	53.7					
130	193	191	186	169	150	92.7	50.9					
120	176	176	169	154	135	85.0	43.5					
110	59.7	59.7	123	112	114	41.7						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 15 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O,KD	1	1	2	2	2	A2	A2	2	A2	2	A2	1
HMIN	254	261	247	229	221	211		111	109	107	108	108
SCAT	38.2	43.5	45.6	38.1	37.6	36.1		36.6	39.3	45.1	52.8	48.2
HMAXF	341	370	348	311	321	292		247	269	266	268	305
SHMAX	240	264	261	201	180	164		311	584	696	724	1049
KM												
370		418										
360		413										
350	463	397	422									
340	463	368	419									
330	453	335	406		323							
320	425	290	381	392	323							
310	385	234	348	392	317							1041
300	328	176	303	385	299	340						1038
290	256	121	244	364	270	340						1015
280	164	74.1	179	329	231	330						955
270	58.5	35.8	120	278	187	307			812	882	815	902
260	35.9		63.4	214	138	270			802	878	810	837
250			21.6	141	93.5	214		539	766	855	791	765
240				72.2	54.4	149		534	704	807	756	684
230				12.4	28.8	79.9		509	613	744	707	605
220						38.1		465	508	664	645	532
210								388	421	569	569	471
200								294	353	466	489	420
190								210	294	380	413	379
180								144	241	316	352	345
170								107	197	268	307	318
160								85.9	160	229	270	289
150								70.4	132	197	234	258
140								64.9	115	171	203	221
130								62.9	108	152	178	193
120								52.2	104	140	162	176
110									25.9	87.1	81.4	123

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 15 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O,KD	1	1	0	0	0	1	1	1	2	2	2	2
HMIN	109	108	108	109	104	107	110	207	199	231	256	254
SCAT	49.2	54.7	42.5	39.1	46.1	42.6	36.8	42.6	46.3	48.9	46.0	47.9
HMAXF	326	327	302	301	301	289	269	298	329	342	358	362
SHMAX	1383	1626	1439	1342	1450	1261	744	536	457	441	294	303
KM												
370												469
360											467	469
350										645	463	462
340										644	448	445
330	1398	1784							651	634	422	417
320	1393	1777							645	611	385	379
310	1361	1742	1877	1809	1860				624	573	332	325
300	1295	1677	1875	1809	1859			915	587	524	270	263
290	1200	1586	1838	1775	1833	1860		906	537	464	208	197
280	1104	1452	1748	1665	1763	1840		873	474	392	143	125
270	986	1273	1607	1533	1645	1770	1335	813	401	313	78.4	66.4
260	862	1086	1415	1354	1491	1649	1317	729	330	228	33.4	28.6
250	745	899	1190	1134	1307	1475	1250	626	263	137		
240	641	715	959	926	1091	1247	1133	504	200	51.1		
230	554	558	745	730	870	989	975	373	137			
220	486	451	569	565	658	731	771	212	81.1			
210	434	392	450	449	497	514	499	40.8	41.8			
200	395	355	383	376	388	354	299		12.4			
190	366	329	343	338	324	268	179					
180	340	307	316	295	283	220	123					
170	315	284	293	266	252	188	95.9					
160	289	246	270	239	224	162	79.2					
150	262	202	247	211	200	138	67.3					
140	235	186	223	182	175	118	59.8					
130	201	177	188	160	150	103	55.7					
120	181	173	168	151	134	96.0	46.1					
110	41.7	61.1	92.2	39.4	114	70.9						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 16 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O,KD	2	2	1	1	1	2	B2	2	3	3	3	A1
HMIN	247	246	216	207	199	249		109	109	107	107	109
SCAT	39.0	38.3	30.6	28.3	61.2	57.7		32.2	43.8	38.0	59.1	59.9
HMAXF	336	335	289	267	330	335		242	248	248	279	288
SHMAX	204	199	180	114	155	112		317	423	492	719	884
KM												
340	373	373				173						
330	371	371			184	172						
320	358	358			183	170						
310	331	333			179	165						
300	296	293			173	158						
290	247	240	438		166	145						898
280	194	185	419		153	127					714	894
270	137	125	387	297	137	101					710	878
260	70.8	64.0	331	293	118	64.3					696	849
250	23.7	25.0	248	271	99.2	24.2		602	591	691	671	807
240			153	229	82.1			601	585	683	633	753
230			69.7	169	66.2			582	565	650	592	679
220			26.0	96.9	51.1			534	529	598	547	588
210				30.3	35.8			447	476	519	498	490
200					12.4			327	404	432	446	412
190								225	328	359	393	363
180								153	262	305	344	331
170								115	210	263	301	310
160								90.9	169	226	262	292
150								77.9	137	190	226	272
140								71.1	119	155	194	238
130								67.4	112	138	165	196
120								65.1	108	132	153	172
110								23.4	36.6	91.1	122	33.3

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 16 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O,KD	1	A1	2	2	2	2	2	2	4	4	4	4
HMIN	105	109	107	107	107	108	110	202	199	239	260	285
SCAT	64.6	54.2	48.1	48.3	43.4	35.2	44.7	51.7	48.3	48.4	43.5	41.0
HMAXF	326	327	323	326	313	285	279	306	320	356	371	382
SHMAX	1339	1464	1419	1513	1434	1077	940	683	471	376	299	310
KM												
390												536
380											469	536
370											469	526
360										541	462	499
350										539	443	456
340										526	411	403
330	1173	1457	1561	1792						501	369	338
320	1171	1451	1559	1785	1956				675	464	317	257
310	1155	1422	1531	1742	1955			1031	668	420	256	168
300	1125	1369	1469	1661	1915			1028	646	366	195	78.3
290	1078	1287	1371	1542	1824	1851.		1006	608	302	139	30.1
280	1023	1187	1248	1379	1683	1842	1554	965	560	231	83.3	
270	953	1068	1103	1169	1485	1767	1539	905	497	164	43.3	
260	871	932	943	951	1227	1610	1485	824	420	106	1.7	
250	781	797	785	753	948	1396	1390	715	339	57.0		
240	691	677	649	589	708	1066	1259	587	261	12.4		
230	607	582	535	459	523	748	1041	415	190			
220	537	505	449	388	402	507	739	192	121			
210	488	445	394	344	335	350	451	54.6	61.0			
200	446	400	356	316	295	268	251		12.4			
190	369	367	329	295	265	226	151					
180	341	340	307	277	239	196	111					
170	321	317	287	258	213	170	89.6					
160	305	295	266	234	187	146	75.7					
150	287	272	241	206	158	124	64.6					
140	256	245	203	176	141	109	57.0					
130	215	201	177	161	131	99.8	53.2					
120	192	175	166	153	126	95.1	45.5					
110	159	57.6	88.7	100	81.2	61.0						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 17 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	4	A4	A2	A2	A2	A2	A2	2	1	1	1	1
HMIN	299	261	219	202	212	262		108	106	107	108	107
SCAT	52.0	44.8	48.6	36.3	40.2	40.0		32.4	41.5	39.8	106	74.7
HMAXF	418	365	313	275	306	355		253	245	264	318	318
SHMAX	334	341	341	195	140	111		365	463	687	1049	1015
KM												
420	467											
410	464											
400	453											
390	434											
380	405											
370	369	562										
360	324	560				196						
350	271	545				195						
340	211	517				189						
330	145	474				176						
320	84.2	415	556			159					775	779
310	42.6	344	556		246	136					774	777
300	12.4	256	546		245	108					770	768
290		158	525		237	76.7					762	752
280		83.3	492	430	220	47.2					750	730
270		37.2	447	428	197	25.0				980	735	696
260			383	410	166			734		978	717	662
250			298	378	131			732	730	952	694	624
240			192	319	92.1			703	727	893	670	583
230			73.6	234	53.4			640	706	804	639	542
220			12.4	117	27.3			518	662	666	594	503
210				42.9				342	597	526	533	466
200								207	481	412	464	433
190								140	339	337	400	402
180								102	246	288	347	368
170								79.2	196	251	305	337
160								68.0	159	217	270	311
150								64.2	130	184	235	283
140								61.8	111	155	200	251
130								60.4	103	139	172	210
120								54.1	99.0	132	159	182
110								19.3	67.7	87.1	81.2	68.5

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 17 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	1	1	1	1	1	0	0	0	2	2	2	F3
HMIN	107	108	107	108	106	105	109	209	205	234	230	289
SCAT	41.9	46.4	44.0	41.8	43.3	48.0	53.1	52.2	41.3	38.8	39.0	41.3
HMAXF	311	306	302	302	291	289	299	332	315	331	323	387
SHMAX	1164	1334	1276	1269	1196	1150	902	690	425	331	290	327
KM												
390												554
380												550
370												530
360												494
350												446
340								941		594		387
330								940		593	536	317
320	1251							927	697	582	536	230
310	1251	1561	1561	1717				808	695	550	522	134
300	1231	1554	1560	1711	1696		1121	846	674	499	491	60.7
290	1162	1514	1531	1675	1696	1561	1112	785	631	429	441	12.4
280	1082	1447	1461	1592	1670	1547	1083	702	574	347	373	
270	982	1323	1351	1457	1598	1499	1035	602	502	261	292	
260	868	1177	1201	1277	1483	1415	965	493	415	170	203	
250	750	1007	1030	1059	1321	1302	883	385	319	93.1	112	
240	645	834	849	826	1102	1148	787	285	216	32.9	47.6	
230	555	675	679	620	835	968	672	186	123		1.7	
220	486	543	545	465	603	742	543	93.7	69.5			
210	432	455	446	380	434	529	406	12.4	28.1			
200	391	396	382	331	340	372	290					
190	363	357	342	299	288	274	199					
180	340	330	316	274	254	222	136					
170	319	309	293	250	226	187	100					
160	296	287	269	226	196	159	81.5					
150	273	264	246	199	164	136	69.0					
140	248	235	221	171	141	116	59.1					
130	213	202	193	154	129	99.1	53.5					
120	187	177	172	145	122	93.1	47.9					
110	127	96.2	132	80.6	108	65.7	12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 18 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	3	3	1	1	1	1	51	1	2	2	2	3
HMIN	253	214	203	189	224	220		110	109	104	108	109
SCAT	34.6	34.0	27.8	53.4	44.1	49.8		28.4	31.7	51.9	38.4	43.9
HMAXF	344	293	273	307	317	308		244	238	271	266	276
SHMAX	362	296	194	230	146	113		295	403	707	752	841
KM												
350	488											
340	486											
330	461											
320	404				343							
310	341			311	241	179						
300	458	636		310	234	178						
290	360	635		304	221	173						
280	249	614	494	292	200	165				815		1027
270	117	566	492	274	173	153				815	1027	1022
260	43.2	494	467	252	141	136				807	1021	992
250		389	409	225	103	113		567		783	983	931
240		264	324	193	65.8	86.0		564	720	743	910	852
230		123	207	155	31.4	55.3		534	710	690	803	755
220		35.3	99.3	118		12.4		468	666	618	672	639
210			37.0	76.0				370	582	534	543	523
200				42.8				262	454	449	436	429
190				13.4				188	327	377	365	367
180								141	245	321	322	330
170								111	196	278	290	304
160								92.3	162	242	262	277
150								79.0	135	208	234	246
140								71.3	116	177	203	212
130								67.6	111	154	173	183
120								59.6	104	143	158	170
110								12.4	39.4	90.0	66.6	41.7

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 18 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	3	3	A1	A1	1	0	0	0	0	0	0	1
HMIN	109	107	106	105	107	108	112	200	230	219	229	270
SCAT	44.7	55.3	55.8	42.6	39.1	44.2	42.8	48.6	40.3	40.3	49.1	49.5
HMAXF	290	302	327	323	289	287	279	302	314	319	349	371
SHMAX	1030	1157	1252	1317	1199	1087	647	493	327	280	251	220
KM												
380												340
370												340
360												336
350											356	325
340											353	307
330			1179	1561							343	282
320			1175	1559					616	469	326	245
310		1179	1159	1524				765	614	463	301	200
300	1234	1178	1112	1447				764	597	442	269	151
290	1234	1165	1049	1325	1792	1635		753	560	406	232	100
280	1217	1132	973	1175	1766	1623	1031	726	503	360	189	51.5
270	1170	1078	883	1009	1682	1571	1021	683	420	304	145	1.7
260	1089	1010	788	838	1540	1478	983	623	314	243	105	
250	978	919	689	681	1343	1338	915	542	198	179	69.9	
240	837	819	598	553	1098	1134	823	437	96.7	117	38.7	
230	693	717	520	451	819	884	702	324	12.4	62.3	12.4	
220	563	620	460	383	593	605	561	195		12.4		
210	463	530	412	341	440	406	396	82.7				
200	399	452	376	315	340	284	221	12.4				
190	358	389	347	297	286	226	116					
180	330	343	321	281	251	193	81.3					
170	310	311	300	263	221	166	62.1					
160	292	288	277	240	194	139	50.9					
150	264	264	252	213	165	111	46.2					
140	224	234	221	183	142	96.7	44.0					
130	191	199	184	153	128	89.8	41.9					
120	176	177	167	144	120	86.4	36.7					
110	59.7	134	75.2	109	97.8	39.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 19 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	1	1	0	0	0	0	S0	0	A1	A1	A1	0
HMIN	247	240	233	200	198	197		108	108		108	107
SCAT	34.3	33.5	36.4	40.9	34.1	52.9		41.9	47.9		44.4	46.1
HMAXF	327	317	320	259	275	302		258	260		276	274
SHMAX	164	146	151	108	74	67		326	484		769	819
KM												
350	338		307									
340	336	309	297									
330	319	305	291			93.2						
320	287	289	274			93.2						
310	263	259	245			92.0						
300	188	216	205		156	89.1					936	1027
290	129	164	154		155	84.4			627		931	1025
280	46.7	108	98.3	245	149	78.5		482	627		904	1002
270	23.7	51.3	54.9	242	136	70.7		478	620		857	956
260		3.1	25.4	231	114	61.5		459	599		779	887
250				216	86.6	51.4		423	567		682	779
240				178	58.0	40.2		379	513		575	649
230				95.9	34.0	28.1		317	445		478	514
220				12.4	12.4	12.4		254	366		400	409
210								197	298		345	348
200								146	245		309	311
190								104	202		280	287
180								78.7	166		252	262
170								64.4	134		223	235
160								59.5	110		188	208
150								57.3	96.1		165	174
140								54.1	88.5		148	162
130								31.6	68.6		39.4	60.3
120												
110												

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 19 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	0	0	0	0	0	0	S0	0	2	2	2	2
HMIN	107	104	107	106	108	109	109	200	199	211	238	249
SCAT	42.9	58.2	53.8	50.9	40.6	38.9	30.9	49.1	42.9	48.5	40.9	39.6
HMAXF	274	291	302	317	299	296	276	297	316	333	334	349
SHMAX	852	872	960	1147	1069	1026	732	601	428	374	255	215
KM												
350												374
340										536	434	369
330										536	433	352
320				1239					681	526	421	322
310			949	1223					678	506	395	282
300		854	949	1195	1477	1627		963	659	473	361	233
290		854	938	1143	1459	1616		958	621	429	315	178
280	1055	847	911	1070	1395	1555	1561	935	563	374	258	122
270	1053	827	860	966	1285	1438	1548	888	486	313	196	75.0
260	1026	795	808	847	1133	1269	1462	828	398	251	131	40.6
250	969	749	743	722	951	1036	1293	741	309	186	70.6	12.4
240	885	693	669	597	745	775	1015	623	222	129	26.7	
230	778	631	590	489	565	540	655	474	152	78.0		
220	652	562	509	411	429	370	371	275	91.3	37.2		
210	536	492	436	358	346	271	215	105	45.5			
200	443	428	378	324	296	218	143	12.4	12.4			
190	377	374	338	301	262	186	110					
180	335	334	311	282	235	159	88.4					
170	308	307	292	263	209	134	72.1					
160	288	284	274	243	185	111	60.0					
150	260	259	250	222	159	92.6	51.5					
140	229	228	219	197	137	85.2	46.7					
130	195	196	190	168	125	81.2	44.3					
120	178	175	170	152	120	78.7	42.4					
110	73.4	73.7	91.4	97.7	49.0	33.0	23.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 20 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	2	2	3	3	3	1	S1	1	2	2	2	3
HMIN	258	246	244	227	230	254		113	110	108	108	107
SCAT	33.1	37.7	38.3	32.3	50.2	46.4		30.1	33.1	47.3	55.7	68.7
HMAXF	333	335	328	295	333	352		249	240	255	284	320
SHMAX	169	176	164	135	177	168		343	422	509	675	1076
KM												
360						270						
350						270						
340	268	334			270	265						
330	267	332	311		270	255						
320	353	321	308		266	238						923
310	333	297	294		256	214						919
300	275	261	271	310	241	183						905
290	212	213	235	308	220	143					633	881
280	143	161	190	293	192	100					632	849
270	70.4	108	137	263	156	57.4					623	805
260	18.4	55.2	80.2	219	111	27.3				627	603	748
250		22.8	33.8	161	70.2			720	727	626	569	682
240				94.4	39.5			703	727	612	534	611
230				27.3	3.1			647	710	579	495	540
220								533	659	543	458	473
210								368	577	495	423	418
200								232	468	438	391	374
190								140	349	375	364	341
180								101	247	314	339	317
170								81.0	196	261	311	296
160								71.2	166	222	273	275
150								65.8	139	191	232	253
140								62.1	117	158	189	223
130								60.3	104	135	157	185
120								50.7	99.1	126	145	166
110									12.4	43.7	54.3	104

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 20 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	3	3	3	3	3	2	2	2	0	0	0	0
HMIN	106	107	104	106	105	107	109	200	209	239	242	239
SCAT	50.4	48.4	53.6	41.6	39.6	33.8	39.1	57.1	55.7	50.3	37.8	37.9
HMAXF	307	310	328	314	296	277	277	299	335	349	322	322
SHMAX	1156	1273	1469	1266	1200	950	802	547	388	283	214	171
KM												
350										428		
340									485	425		
330			1540						484	413	428	326
320		1477	1530	1635					476	393	428	326
310	1234	1477	1494	1630					461	365	416	318
300	1229	1460	1432	1586	1784			779	436	324	391	299
290	1201	1412	1343	1494	1774			774	407	272	349	269
280	1149	1335	1225	1354	1712	1792	1424	753	371	210	289	229
270	1072	1218	1080	1165	1589	1775	1411	729	328	143	212	180
260	973	1066	925	952	1417	1684	1353	690	283	81.1	117	121
250	857	892	774	756	1180	1514	1247	636	238	41.8	52.8	62.9
240	732	730	644	595	909	1242	1090	565	191	12.4		12.4
230	615	589	541	469	655	863	871	468	136			
220	514	476	461	388	471	543	598	355	71.6			
210	436	399	400	336	359	334	348	186	12.4			
200	381	349	354	301	295	239	196	12.4				
190	345	316	321	277	257	194	135					
180	319	294	295	258	230	167	93.1					
170	299	275	271	239	205	142	75.3					
160	279	258	248	217	179	119	62.8					
150	259	239	224	195	152	99.4	53.2					
140	236	216	196	174	130	82.6	46.8					
130	206	188	169	154	119	85.1	42.9					
120	177	167	153	140	114	82.4	41.4					
110	102	96.1	74.6	100	82.9	52.9	12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 21 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	0	0	1	1	1	1	S1	1	A0	A0	0	A1
HMIN	232	247	222	200	218	239		109	110	107	108	110
SCAT	42.6	36.9	28.2	39.7	55.1	40.9		31.1	29.3	50.7	41.6	51.4
HMAXF	329	324	285	263	327	322		227	235	262	257	285
SHMAX	177	139	118	84	96	80		217	334	618	546	761
KM												
330	297	283			130	150						
320	294	282			129	150						
310	282	273			127	147						
300	262	253			122	139						
290	236	222	311		115	127						819
280	201	176	309		107	109						817
270	158	126	290	178	95.1	83.6				605		801
260	110	66.1	249	178	81.5	55.0				604	678	769
250	65.7	22.7	185	173	66.2	30.7				596	673	722
240	32.1		108	163	49.3	6.8			627	576	649	658
230			39.9	146	32.5			430	622	545	604	578
220				119	12.4			424	582	501	545	495
210				79.0				397	510	446	481	421
200				12.4				346	391	390	417	370
190								264	279	339	357	335
180								173	227	296	307	310
170								120	184	257	270	284
160								92.6	147	222	245	259
150								75.5	120	189	221	235
140								62.3	101	150	194	197
130								57.6	91.4	125	165	167
120								48.7	67.1	108	139	147
110								12.4		29.7	40.4	12.4

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 21 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	A1	A1	1	A1	A1	A0	A0	A0	0	0	0	1
HMIN		109	109	109	106	110		200	200	199	237	249
SCAT		53.3	45.1	45.0	48.2	34.2		35.9	40.0	55.4	50.5	40.9
HMAXF		297	304	307	297	275		282	278	324	344	336
SHMAX		916	936	1026	1094	847		404	329	220	152	120
KM												
350											225	
340											224	215
330										283	220	214
320										282	212	207
310			1045	1240						278	200	193
300		976	1044	1233	1424					270	182	173
290		972	1020	1197	1416			834		255	159	145
280		951	964	1131	1378	1561		834	642	238	130	112
270		913	897	1033	1310	1554		812	635	217	96.5	78.4
260		859	812	900	1212	1489		754	608	191	65.9	43.6
250		786	709	746	1068	1360		671	561	162	39.9	12.4
240		695	598	602	878	1151		547	498	129	16.2	
230		599	497	480	672	838		389	399	97.4		
220		502	421	396	498	520		208	254	65.9		
210		415	364	341	380	347		84.7	100	40.3		
200		352	324	306	306	247		12.4	12.4	12.4		
190		315	297	283	262	202						
180		293	277	262	233	173						
170		275	259	241	208	148						
160		256	240	219	183	124						
150		232	215	195	159	104						
140		204	184	167	139	91.8						
130		170	159	146	126	85.3						
120		154	150	137	120	79.4						
110		30.3	33.3	33.1	94.5							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 22 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	1	1	A1	A1	1	1	S1	1	3	3	3	2
HMIN	269	270	249	219	199	207		114	105	107	106	105
SCAT	40.5	38.7	44.1	31.6	42.8	44.5		25.4	27.5	43.1	58.4	71.4
HMAXF	347	355	336	287	267	306		225	222	225	262	285
SHMAX	113	110	138	113	88	75		198	285	335	497	662
KM												
360		202										
350	214	201										
340	213	194	246									
330	205	180	245									
320	190	161	238									
310	168	134	225			118						
300	139	104	206			117						
290	102	71.4	175	270		114						585
280	55.4	38.9	136	267		108						585
270	12.4	3.9	86.6	251	182	98.4					491	579
260			43.1	222	181	86.7					491	567
250			12.4	173	175	73.5					486	550
240				110	166	58.6					473	529
230				47.1	144	42.5		505	531	491	454	498
220				12.4	108	27.8		499	531	489	426	455
210					60.2	12.4		462	508	476	394	408
200					12.4			359	450	449	363	360
190								177	364	408	336	325
180								109	275	347	312	301
170								82.4	217	282	287	283
160								66.3	177	228	261	264
150								59.4	144	193	232	242
140								56.4	117	153	203	216
130								54.8	99.5	125	161	192
120								36.4	94.1	116	139	155
110									68.2	83.0	111	109

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 22 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	2	2	2	2	2	2	2	2	1	1	1	0
HMIN	106	106	108	103	107	107	108	191	184	199	253	287
SCAT	58.4	43.0	38.0	33.8	40.3	42.8	37.2	30.1	31.7	52.5	46.7	46.8
HMAXF	331	303	296	272	277	287	277	249	249	317	353	374
SHMAX	1129	1110	1059	917	836	812	728	397	171	161	100	99
KM												
380												167
370												167
360											156	163
350											156	156
340	1027										153	145
330	1027										147	127
320	1018									215	137	105
310	995	1360								214	123	76.4
300	957	1358	1444							210	105	46.5
290	902	1329	1433			1105				201	84.7	19.3
280	836	1263	1377	1498	1229	1098	1298			188	63.7	
270	756	1158	1266	1496	1220	1062	1287			172	42.0	
260	668	1022	1118	1449	1175	995	1232			152	22.8	
250	584	865	934	1336	1093	903	1134	1131	430	129		
240	508	701	740	1174	969	786	979	1103	422	106		
230	444	559	577	933	797	651	780	1014	393	80.6		
220	394	445	451	630	606	515	534	847	341	57.3		
210	356	373	372	442	437	401	328	411	246	35.7		
200	327	328	322	346	337	306	193	61.5	112	12.4		
190	307	300	293	294	276	242	128		38.4			
180	291	281	272	266	241	200	96.6					
170	276	267	253	245	215	172	78.3					
160	259	251	232	223	189	147	64.8					
150	232	232	205	198	161	122	54.8					
140	202	209	176	173	133	101	48.3					
130	175	186	160	150	118	89.2	44.1					
120	165	167	152	140	110	83.7	41.8					
110	94.9	96.6	80.7	126	83.9	57.3	20.5					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 23 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	0	0	0	0	0	1	S1	1	1	1	1	1
HMIN	285	254	230	211	208	227		104	105	107	107	106
SCAT	34.3	37.3	34.1	25.4	27.9	69.0		27.5	35.6	31.8	49.5	48.3
HMAXF	355	335	295	261	255	350		220	223	248	267	287
SHMAX	84	101	98	69	45	80		212	279	447	552	774
KM												
360	179											
350	178					92.3						
340	170	197				91.9						
330	154	196				90.4						
320	131	188				88.0						
310	99.2	174				84.8						
300	66.8	151	226			80.3						
290	30.8	122	224			74.1						827
280		90.3	214			65.9						823
270		54.9	196	215		56.4					580	802
260		26.4	161	215	130	46.4					577	759
250			113	205	129	36.3				651	563	707
240			53.3	177	120	26.2				641	535	636
230			.4	119	102	12.4		450	463	600	498	558
220				48.9	72.8			450	462	528	454	482
210					27.8			434	448	449	410	412
200								389	415	375	371	361
190								299	362	318	339	326
180								202	295	276	313	302
170								139	233	247	285	282
160								105	181	220	258	263
150								83.6	140	196	237	242
140								69.1	107	163	204	219
130								60.9	92.4	124	173	195
120								57.4	87.7	114	144	161
110								39.9	70.4	41.4	58.0	75.2

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 23 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	A1	A1	A1	1	1	A1	A1	1	1	1	1	1
HMIN			106	108	105			200	200	249	283	291
SCAT			45.4	42.5	40.9			27.7	42.2	46.9	47.3	37.8
HMAXF			299	295	286			247	287	342	372	363
SHMAX			1192	1146	1007			289	171	116	99	79
KM												
380											163	
370											163	162
360											161	162
350										188	155	157
340										188	145	147
330										184	131	130
320										177	109	105
310										165	84.9	73.9
300			1491	1554						149	57.7	40.7
290			1476	1548	1430				285	126	31.7	
280			1426	1504	1422				283	99.5		
270			1340	1415	1375				270	70.7		
260			1213	1285	1288				255	41.2		
250			1046	1094	1145			936	234	12.4		
240			872	883	961			921	209			
230			689	678	765			854	178			
220			528	507	585			684	132			
210			420	392	435			204	73.8			
200			354	327	332			12.4	12.4			
190			316	291	275							
180			292	268	246							
170			272	248	225							
160			249	226	201							
150			224	203	173							
140			198	177	152							
130			174	152	132							
120			160	140	122							
110			93.9	90.5	98.4							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 24 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	1	1	3	3	3	5	5	5	6	6	A6	6
HMIN	270	249	229	206	227	277	258	109	106	106	108	106
SCAT	41.9	40.1	31.6	39.0	45.2	42.8	40.5	41.4	54.4	46.0	45.3	44.6
HMAXF	352	329	290	280	327	348	329	253	272	287	316	272
SHMAX	90	91	77	68	71	61	66	286	554	720	1110	1098
KM												
360	163											
350	163					119						
340	160					118						
330	152	171			110	114	130					
320	139	169			109	106	128				1240	
310	120	162			106	93.5	122				1234	
300	96.4	149			100	74.6	113				1200	
290	70.0	130	188		91.7	51.1	98.4			874	1136	
280	39.7	106	183	139	81.1	23.1	78.2		651	868	1042	1484
270	3.1	76.6	169	137	68.9		51.8		651	843	929	1483
260		44.5	145	130	56.0		20.4	428	643	795	806	1457
250		12.4	109	119	41.8			428	625	731	685	1394
240			60.4	101	27.6			419	592	647	580	1292
230			12.4	73.6	12.4			393	554	552	489	1152
220				44.4				361	505	451	415	983
210				18.8				313	445	363	360	795
200								250	374	303	322	599
190								193	300	262	296	442
180								143	234	235	274	346
170								108	186	213	254	298
160								86.1	155	187	231	269
150								71.6	136	156	204	245
140								62.0	115	116	166	222
130								58.6	95.8	108	143	185
120								55.3	89.0	105	132	158
110								22.1	68.9	79.2	59.9	132

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 24 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	6	6	5	5	5	A5	55	5	5	5	5	5
HMIN	106	105	107	104	106	107	100	190	229	279	282	240
SCAT	81.5	63.0	59.6	51.0	45.6	36.2	36.6	36.8	41.8	33.6	37.5	29.7
HMAXF	336	344	377	320	302	270	280	278	323	367	358	316
SHMAX	1178	1453	1530	1626	1463	997	713	248	189	142	159	136
KM												
380			1240									
370			1235							270		
360			1214							267	310	
350		1298	1174							252	306	
340	870	1297	1112							225	291	
330	869	1282	1042						325	194	265	
320	862	1250	967	1965					324	157	230	303
310	848	1202	887	1947	2116				316	121	185	300
300	828	1140	806	1892	2115				299	85.4	134	280
290	799	1056	722	1799	2082				273	48.5	73.3	249
280	767	958	644	1667	1997	1792	1287	454	235	12.4		208
270	729	855	573	1481	1868	1792	1264	449	191			157
260	686	751	512	1253	1642	1758	1194	425	142			99.5
250	639	651	460	992	1333	1656	1076	390	95.3			45.7
240	590	557	417	767	1000	1484	919	340	52.1			3.1
230	542	475	382	595	717	1228	691	282	12.4			
220	495	412	353	462	513	920	455	219				
210	449	366	329	377	370	597	271	154				
200	407	333	308	335	293	363	160	90.7				
190	369	309	290	289	251	225	106	12.4				
180	333	289	272	262	223	174	79.0					
170	299	272	256	237	199	146	63.1					
160	273	255	239	217	175	123	52.2					
150	250	237	219	197	150	102	44.5					
140	224	215	194	176	128	88.7	40.2					
130	192	189	167	156	117	82.9	38.2					
120	166	164	152	141	111	80.0	36.3					
110	132	132	89.6	109	97.7	64.1	32.5					
100							19.7					

ELECTRON DENSITY

RAMEY AFB. PUERTO RICO 60 W 25 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	5	5	6	6	6	4	S4	4	4	4	4	3
HMIN	259	250	283	219	250	249		108	108	107	108	108
SCAT	43.4	39.6	41.4	33.6	41.2	43.0		34.3	34.1	43.6	50.9	40.6
HMAXF	358	337	387	280	344	336		258	245	270	284	284
SHMAX	151	157	161	146	139	165		331	350	603	793	875
KM												
390			265									
380			263									
370			254									
360	245		236									
350	243		213		230							
340	235	295	185		229	297						
330	220	293	151		223	296						
320	199	282	112		209	287						
310	173	261	74.3		190	269						
300	143	231	44.9		165	244						
290	108	189	23.5		137	205					919	1136
280	76.0	140		373	108	157				782	918	1133
270	41.8	80.9		365	78.9	98.3				782	902	1103
260	12.4	40.2		341	49.4	45.8		567		771	868	1032
250		3.1		297	12.4	12.4		559	554	740	814	943
240				187				527	550	688	743	823
230				78.0				471	526	615	642	685
220				12.4				391	477	526	534	540
210								301	402	427	433	430
200								221	321	343	363	357
190								161	252	283	316	314
180								117	201	246	283	286
170								87.2	169	216	256	263
160								69.9	145	186	230	239
150								59.0	127	157	202	205
140								53.1	102	133	173	169
130								50.8	89.8	117	145	155
120								49.0	85.6	109	133	148
110								27.2	37.6	62.4	75.0	61.1

ELECTRON DENSITY

RAMEY AFB. PUERTO RICO 60 W 25 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	3	3	3	3	3	A3	A3	A3	A3	3	A3	A3
HMIN	109	107	109	104	104			199	230	237	219	275
SCAT	46.1	36.8	41.3	36.8	41.6			59.5	49.5	36.9	53.7	48.9
HMAXF	296	287	284	279	278			325	355	317	346	380
SHMAX	1020	984	992	914	932			360	294	222	215	201
KM												
390												297
380												297
370												294
360									409			285
350									408		271	268
340									400		271	247
330								448	383		266	222
320								447	358	450	256	191
310								441	326	446	241	152
300	1317							429	285	425	223	106
290	1213	1310	1335					403	237	388	202	64.7
280	1183	1299	1331	1353	1217			384	191	339	178	27.3
270	1122	1242	1296	1333	1206			352	148	256	151	
260	1036	1136	1224	1263	1160			312	106	167	125	
250	916	1000	1104	1142	1083			268	69.2	76.4	96.8	
240	782	849	945	977	953			220	36.9	23.7	70.5	
230	645	706	772	777	769			168	3.9		41.8	
220	516	567	608	580	578			109			12.4	
210	427	450	475	435	427			56.0				
200	370	378	383	349	335			12.4				
190	330	331	328	299	263							
180	301	299	294	265	226							
170	276	275	267	238	199							
160	248	251	243	214	174							
150	218	225	216	191	149							
140	187	195	187	167	131							
130	163	169	163	147	119							
120	151	158	151	134	111							
110	41.7	108	41.7	106	96.1							

ELECTRON DENSITY

RAMEY AFB. PUERTO RICO 60 W 26 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	3	3	2	2	2	2	S2	A2	A3	A3	3	A4
HMIN	291	252	238	202	200	221		108	109		106	
SCAT	40.3	37.4	32.7	25.2	34.0	62.2		42.5	28.5		42.1	
HMAXF	379	339	297	251	261	321		259	246		299	
SHMAX	149	148	127	83	49	64		294	371		975	
KM												
380	265											
370	262											
360	251											
350	231											
340	205	283										
330	171	270				85.8						
320	132	245				85.8						
310	86.5	241				85.1						
300	44.8	206	309			83.3					1347	
290		164	305			80.4					1331	
280		117	287			76.4					1278	
270		65.8	254		110	71.2					1185	
260		32.0	199	259	109	64.1		426			1049	
250			128	259	106	54.6		422	710		868	
240			39.7	247	98.5	42.4		405	703		674	
230				215	86.5	25.9		377	657		488	
220				157	69.3			336	564		377	
210				59.0	46.8			281	420		322	
200					12.4			222	291		290	
190								170	220		259	
180								132	177		224	
170								105	146		166	
160								84.1	118		139	
150								70.7	97.0		128	
140								65.9	90.1		121	
130								55.7	87.3		117	
120								42.1	73.2		114	
110								17.8	22.1		66.1	

ELECTRON DENSITY

RAMEY AFB. PUERTO RICO 60 W 26 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	A4	A4	3	3	3	4	A4	4	4	4	4	5
HMIN		106	108	109	108	107		211	230	276	281	273
SCAT		44.1	45.2	38.8	45.8	39.8		45.0	37.4	32.6	40.5	33.6
HMAXF		296	306	295	282	270		300	323	361	373	364
SHMAX		1056	1231	1208	1159	825		356	260	218	246	225
KM												
380											442	
370										434	441	430
360										434	431	429
350										422	405	412
340										388	368	376
330									469	343	318	326
320									469	286	251	272
310			1491						456	219	180	213
300		1240	1485	1735				621	424	154	106	149
290		1234	1446	1727	1665			614	382	92.3	42.7	91.5
280		1197	1370	1668	1664			591	327	29.4		37.6
270		1126	1257	1552	1634	1353		552	263			
260		1029	1109	1377	1561	1333		499	198			
250		908	946	1162	1458	1270		416	125			
240		785	774	919	1296	1161		317	61.6			
230		663	618	696	1074	1015		192				
220		560	496	527	799	805		74.7				
210		457	410	401	572	564						
200		390	356	330	398	366						
190		343	320	288	300	246						
180		309	294	258	247	184						
170		283	270	234	215	147						
160		260	246	214	189	122						
150		235	221	192	164	104						
140		204	195	166	141	91.1						
130		175	169	148	125	82.1						
120		160	152	137	116	77.0						
110		107	70.4	33.7	85.7	48.6						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 27 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	5	5	4	4	4	A5	S5	A5	A4	A4	A4	4
HMIN	220	227	210	204	192	250			110	108	108	108
SCAT	33.9	37.7	29.1	25.9	37.9	60.2			49.6	54.7	36.3	50.0
HMAXF	351	309	271	267	249	354			248	305	295	291
SHMAX	226	261	219	139	60	98			393	749	1028	1241
KM												
360	471					130						
350	471					130						
340	459					128						
330	424					125						
320	372					119						
310	299	531				112				734		
300	217	525				104				732	1457	1612
290	137	499				93.7				719	1450	1612
280	59.3	455	591			79.0				694	1395	1594
270	1.7	391	591	387		60.5				655	1283	1543
260		296	570	379		37.2				607	1116	1461
250		168	517	345	142	3.1			539	551	920	1341
240		67.7	406	275	140				536	493	724	1147
230		23.5	240	182	133				522	437	553	916
220			101	88.4	122				497	390	438	683
210			12.4	32.2	101				462	351	366	502
200					54.3				404	317	322	385
190									335	285	293	326
180									269	251	271	290
170									208	222	251	264
160									153	197	229	246
150									122	168	203	227
140									98.0	135	159	200
130									92.3	118	137	163
120									81.5	110	131	150
110									12.4	35.4	49.0	77.4

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 27 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	A4	A4	A2	2	A2	A2	A2	A2	1	A1	A1	0
HMIN	107		105	109	103			199	257	271	266	259
SCAT	42.4		37.6	46.0	44.7			49.0	34.9	36.5	37.9	43.5
HMAXF	294		278	281	285			307	342	359	365	350
SHMAX	1254		925	872	947			229	165	161	166	169
KM												
370											295	
360										311	293	281
350									314	307	283	281
340									314	291	262	278
330									305	263	232	266
320									281	221	195	247
310								340	252	174	153	224
300	1635							338	214	122	112	196
290	1631			1126	1292			330	167	75.6	71.5	156
280	1590		1298	1126	1289			314	119	36.7	41.5	109
270	1503		1284	1111	1258			291	65.3		18.4	56.4
260	1370		1226	1069	1195			262	21.6			12.4
250	1193		1119	1002	1099			227				
240	998		973	904	963			186				
230	808		807	770	790			138				
220	644		635	610	610			82.6				
210	514		496	473	458			41.8				
200	421		398	380	342			12.4				
190	360		338	318	272							
180	319		299	277	230							
170	287		268	249	199							
160	257		238	225	175							
150	228		211	197	155							
140	200		185	168	139							
130	173		164	148	128							
120	152		153	138	121							
110	43.2		100	48.7	106							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 28 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	0	0	1	1	1	1	1	1	0	0	0	0
HMIN	260	261	217	197	257	266	229	110	108	106	106	107
SCAT	38.4	37.0	31.9	36.8	49.4	39.1	40.9	38.5	35.8	46.3	43.9	39.7
HMAXF	345	343	285	261	341	334	298	238	252	264	281	283
SHMAX	140	134	112	79	53	47	60	257	379	606	841	891
KM												
350	259	259			89.8							
340	258	259			89.8	93.2						
330	249	251			88.7	93.0						
320	230	234			85.7	90.2						
310	205	208			81.6	84.0						
300	173	173			74.1	75.5	120					
290	134	132	257		61.5	63.0	118				1080	1251
280	90.1	87.0	255		42.8	47.1	114				1080	1250
270	41.8	45.8	242	171	28.2	26.6	105			744	1062	1219
260	3.1		217	171	12.4		92.3		554	742	1017	1142
250			182	167			73.5		553	726	950	1041
240			132	158			48.9	450	538	693	832	885
230			69.4	141			12.4	445	502	641	685	692
220			23.7	114				426	441	572	530	524
210				76.1				392	370	484	423	399
200				36.4				334	307	405	358	330
190								246	254	341	316	293
180								155	215	295	288	265
170								103	184	262	263	239
160								79.5	156	234	239	213
150								65.2	117	206	213	177
140								59.5	95.5	183	182	159
130								57.8	89.6	149	154	149
120								52.1	86.7	120	139	144
110								12.4	45.8	78.8	104	87.1

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 28 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	A0	A0	A1	A1	A1	A3	A3	A3	A2	2	2	2
HMIN								199	199	260	279	253
SCAT								45.9	48.8	41.6	45.7	35.7
HMAXF								312	330	367	375	336
SHMAX								271	282	194	199	156
KM												
380											326	
370										311	325	
360										309	317	
350										298	301	
340										278	277	311
330									374	250	244	310
320								409	371	217	201	296
310								409	359	178	151	271
300								402	337	139	96.4	235
290								385	312	100	51.2	188
280								358	281	65.8	12.4	133
270								323	246	36.5		75.2
260								279	207	3.9		33.2
250								229	171			
240								176	133			
230								129	98.5			
220								86.8	68.4			
210								46.1	40.6			
200								12.4	12.4			

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 29 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O,KD	2	2	2	2	2	S1	S1	1	1	1	1	2
HMIN	258	228	217	209	200	250	231	109	108	106	104	109
SCAT	37,5	30,4	27,3	56,5	70,4	59,6	35,8	33,4	37,6	31,4	42,2	46,0
HMAXF	340	296	280	308	327	351	297	227	247	254	283	289
SHMAX	160	125	112	148	117	80	62	199	366	465	907	940
KM												
360						111						
350	306					111						
340	306					110						
330	300				123	107						
320	282				123	103						
310	256			225	122	97,3						
300	221	310		223	119	88,7	135					
290	176	307		219	115	76,8	134				1031	1173
280	121	288	297	211	109	62,4	127				1030	1163
270	67,0	252	288	200	103	46,4	115				1007	1126
260	20,5	193	259	182	95,8	28,7	95,4			714	954	1060
250		116	208	150	87,7	1,1	68,3		541	710	873	965
240		48,6	137	113	79,1		37,7		536	677	758	833
230		16,5	70,4	69,9	69,9			351	513	607	625	688
220			23,7	37,0	59,4			347	473	508	499	543
210				4,7	46,6			329	408	403	400	431
200					12,4			292	333	322	338	359
190								238	266	271	299	313
180								180	215	234	272	281
170								133	178	199	247	254
160								101	149	161	217	226
150								83,7	127	143	189	200
140								74,7	116	135	168	179
130								71,7	104	129	154	165
120								50,4	89,5	126	146	157
110								12,4	35,4	86,5	96,7	39,4

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 29 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O,KD	A2	A2	A1	A1	A1	A1	A1	A1	A2	A2	2	3
HMIN								200	240	219	268	279
SCAT								40,5	45,9	37,9	44,3	39,2
HMAXF								292	323	297	371	364
SHMAX								357	226	152	145	124
KM												
380											234	
370											234	231
360											231	230
350											221	223
340											206	208
330									392		185	186
320									392		158	155
310									384		125	119
300								548	368	306	90,8	82,6
290								647	342	303	61,5	44,7
280								633	305	290	37,2	12,4
270								599	254	267	12,4	
260								546	186	231		
250								469	90,9	181		
240								365	12,4	117		
230								256		58,0		
220								155		12,4		
210								73,9				
200								12,4				

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 30 SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O,KD	3	3	2	2	2	2	S2	2	A2	A2	A2	A0
HMIN	267	239	204	209	199	238		108				109
SCAT	34,3	32,0	42,6	33,2	52,1	45,2		32,5				37,2
HMAXF	351	315	317	278	290	315		235				281
SHMAX	118	117	140	103	86	61		224				1011
KM												
360	234											
350	234											
340	228											
330	212											
320	188	259	234			108						
310	156	258	233			107						
300	116	245	224			104						
290	70,5	220	210		133	99,0						1484
280	48,5	181	188	236	132	90,9						1484
270	19,3	134	157	233	128	79,4						1453
260		84,9	122	219	122	63,4						1368
250		45,5	86,0	194	114	44,3						1229
240		12,4	55,7	153	102	17,2		407				1023
230			34,8	104	84,2			404				790
220			21,1	48,5	62,6			385				597
210			12,4	12,4	39,6			347				456
200					12,4			278				378
190								206				334
180								147				303
170								109				279
160								85,2				256
150								72,0				230
140								64,7				200
130								58,8				168
120								54,6				152
110								28,9				33,3

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 30 SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O,KD	0	0	5	5	5	A8	A8	A8	9	S9	F9	S8
HMIN	109	110	107	105	107	104		230	331			
SCAT	49,1	50,5	38,7	40,6	44,4	37,4		37,7	45,3			
HMAXF	275	287	284	282	295	285		323	443			
SHMAX	897	912	892	869	985	856		377	466			
KM												
450									714			
440									713			
430									698			
420									666			
410									617			
400									549			
390									463			
380									370			
370									280			
360									190			
350									121			
340									71,6			
330								657	35,5			
320								650				
310								637				
300					1299			590				
290		1022	1184	1131	1288	1360		536				
280	1080	1018	1181	1130	1254	1353		470				
270	1077	994	1144	1106	1187	1305		388				
260	1064	951	1067	1048	1087	1205		301				
250	1009	886	964	954	948	1061		207				
240	944	803	813	835	782	860		103				
230	851	707	662	699	617	646		12,4				
220	736	599	525	574	476	475						
210	609	500	423	465	375	346						
200	492	420	358	380	312	259						
190	396	362	319	323	268	205						
180	330	322	293	282	236	170						
170	307	294	271	264	208	142						
160	290	267	245	230	180	121						
150	247	238	214	204	159	104						
140	213	208	183	174	139	91,3						
130	185	179	160	150	122	81,8						
120	167	165	150	138	111	76,6						
110	41,7	12,4	53,6	97,9	56,5	50,8						

AVERAGE ELECTRON DENSITY KP BELOW 4.5

RAMEY AFB, PUERTO RICO 60 W SEP 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	25	26	28	28	28	27	3	19	22	22	21	25
KP	2.0	2.0	1.9	1.9	1.9	2.0	1.7	1.8	1.7	1.8	1.8	1.6
HMIN	262	248	226	213	218	232	191	109	108	108	107	108
RATIO	6.1	6.4	7.0	7.2	6.0	5.9	6.5	6.1	5.3	4.6	4.1	3.9
SCAT	40.6	37.7	36.6	36.7	44.7	45.9	38.4	34.4	40.4	43.8	54.4	55.9
NMAX	354	356	359	278	195	179	167	505	622	700	838	970
HMAXF	353	334	305	287	307	320	285	243	249	260	281	299
SHMAX	202	187	176	132	114	103	92	281	422	553	754	939
SHINF	1201	1193	1189	917	664	608	564	1706	2175	2527	3117	3676
KM												
950	29.7	26.9	23.7	16.9	13.0	12.6	9.7	24.5	30.9	37.1	49.3	61.7
900	38.1	34.5	30.4	21.7	16.7	16.2	12.4	31.4	39.7	47.6	63.3	79.2
850	48.8	44.3	39.0	27.8	21.4	20.8	15.9	40.3	51.0	61.1	81.2	102
800	62.5	56.7	49.9	35.7	27.4	26.6	20.4	51.7	65.4	78.4	104	130
750	80.0	72.6	64.0	45.7	35.1	34.1	26.1	66.3	83.9	100	133	167
700	102	92.7	81.8	58.5	44.9	43.5	33.4	85.0	107	129	171	214
650	130	118	104	74.6	57.3	55.5	42.7	109	137	165	218	273
600	163	149	133	95.0	72.8	70.3	54.4	139	175	210	278	346
550	204	187	167	120	91.7	88.5	68.9	177	223	266	352	438
500	250	232	208	150	114	110	86.6	223	282	336	442	547
490	259	241	217	157	119	114	90.5	234	295	351	461	571
480	269	251	226	164	124	119	94.5	245	309	367	482	595
470	278	260	236	171	129	124	98.6	256	323	384	503	620
460	287	270	245	178	134	128	103	268	337	401	524	646
450	297	279	255	185	140	133	107	280	352	418	546	672
440	305	289	264	193	145	138	112	292	368	436	568	698
430	314	298	274	200	150	143	116	305	383	454	591	724
420	322	307	283	208	155	147	121	318	399	473	613	750
410	329	315	293	215	160	152	125	331	416	491	636	776
400	335	323	302	222	165	156	130	344	432	510	659	801
390	340	330	310	229	170	160	134	358	449	529	681	826
380	343	337	319	236	174	164	138	372	466	548	703	850
370	345	342	326	243	179	167	143	385	483	567	724	872
360	343	347	333	250	182	170	147	399	500	585	744	893
350	338	348	339	255	186	172	151	412	516	603	764	912
340	329	346	344	261	188	173	154	426	532	620	781	929
330	311	340	345	265	190	173	157	438	547	636	797	942
320	285	328	345	268	190	171	160	451	562	650	810	952
310	250	307	340	269	189	167	163	462	575	664	821	958
300	209	277	331	268	185	159	164	473	587	675	829	958
290	161	237	317	263	177	149	165	482	598	684	832	950
280	112	187	294	253	165	134	162	490	607	690	827	931
270	63.4	136	263	239	148	115	156	496	613	692	809	898
260	30.4	85.8	221	218	128	91.8	145	501	617	688	776	846
250	9.9	48.6	172	188	106	67.9	129	502	615	673	727	779
240	2.5	22.7	117	144	81.8	47.6	107	494	604	644	661	695
230		9.8	61.4	106	55.8	31.3	75.2	472	577	599	585	602
220		3.2	25.2	65.6	34.6	18.0	62.2	429	529	537	511	511
210			6.0	30.9	18.6	9.1	50.8	362	461	465	444	434
200			.4	5.5	5.0	1.4	38.4	282	381	394	390	378
190				.4			27.7	204	305	335	347	340
180							19.8	146	244	289	311	313
170							14.1	109	199	252	280	290
160							10.3	86.9	162	218	250	267
150							7.8	73.4	132	187	221	242
140							6.7	65.7	111	158	189	212
130							6.3	61.6	100	136	161	182
120							5.8	52.1	91.4	124	146	161
110								16.8	39.8	56.5	74.3	65.0

AVERAGE ELECTRON DENSITY KP BELOW 4.5

RAMEY AFB, PUERTO RICO 60 W SEP 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	21	21	23	23	20	16	13	22	28	27	26	26
KP	1.8	1.8	1.7	1.8	1.8	1.7	1.5	1.8	1.8	1.9	1.8	2.0
HMIN	108	108	109	107	106	108	110	202	208	230	253	265
RATIO	4.0	4.1	4.2	4.4	4.8	5.3	6.0	6.0	5.7	5.5	5.6	5.8
SCAT	52.3	50.4	48.6	47.0	44.4	40.9	38.7	46.2	44.5	45.5	45.2	42.5
NMAX	1169	1281	1345	1433	1487	1589	1424	885	569	445	369	353
HMAXF	309	308	310	310	298	290	280	295	311	337	355	362
SHMAX	1127	1171	1194	1197	1116	1053	813	511	350	284	230	209
SHINF	4423	4784	4992	5240	5311	5537	4830	3008	1955	1539	1270	1205
KM												
950	78.6	85.8	90.4	96.4	94.3	96.6	82.1	54.7	38.5	34.2	31.2	31.0
900	101	110	116	124	121	124	105	70.2	49.3	43.9	40.0	39.8
850	129	141	149	159	155	159	135	90.0	63.3	56.3	51.3	51.0
800	166	181	191	203	199	204	173	115	81.2	72.2	65.7	65.4
750	212	232	244	261	255	261	222	148	104	92.4	84.0	83.6
700	272	297	312	333	326	334	285	189	133	118	107	107
650	346	378	399	425	417	427	364	242	169	150	136	135
600	440	480	506	540	530	544	463	307	215	190	172	170
550	554	606	638	681	669	688	587	389	271	238	214	212
500	690	755	795	848	837	862	737	486	337	294	262	259
490	720	788	830	884	874	900	771	508	352	306	272	268
480	750	821	864	921	911	940	805	530	366	318	282	278
470	781	854	900	959	950	980	840	552	381	330	292	287
460	812	889	936	997	989	1021	877	575	396	342	302	296
450	843	923	972	1036	1029	1063	914	598	411	354	311	305
440	875	958	1009	1075	1069	1106	951	622	427	366	321	313
430	906	992	1045	1113	1109	1149	989	646	442	377	329	321
420	937	1027	1081	1152	1150	1192	1028	669	457	388	338	329
410	968	1060	1117	1189	1190	1236	1067	693	471	398	345	335
400	997	1093	1151	1226	1229	1279	1106	716	486	408	351	341
390	1025	1125	1185	1261	1267	1321	1144	739	499	417	357	345
380	1052	1155	1216	1294	1304	1362	1182	761	512	425	361	348
370	1077	1182	1245	1325	1339	1401	1219	782	524	431	364	348
360	1099	1207	1271	1352	1372	1438	1254	802	534	436	363	342
350	1119	1229	1294	1376	1401	1473	1288	820	543	438	356	329
340	1134	1247	1313	1396	1427	1504	1319	836	550	436	344	311
330	1146	1260	1327	1410	1449	1531	1347	850	554	428	324	283
320	1152	1266	1335	1418	1465	1554	1372	861	553	411	297	247
310	1150	1262	1332	1412	1474	1571	1392	867	545	387	261	203
300	1137	1247	1314	1389	1470	1582	1408	868	528	353	219	156
290	1107	1214	1274	1341	1449	1580	1417	860	502	312	173	113
280	1061	1157	1206	1262	1400	1550	1417	841	467	263	126	75.1
270	995	1074	1113	1154	1315	1480	1394	806	424	211	85.7	46.9
260	910	970	995	1020	1194	1365	1325	753	372	159	51.6	27.9
250	810	848	860	869	1040	1200	1207	679	314	110	27.2	13.0
240	703	722	722	716	859	984	1033	578	254	69.8	12.6	5.3
230	600	603	595	575	672	753	802	447	190	40.7	4.8	2.3
220	507	502	489	459	509	545	550	283	126	22.8	2.3	.5
210	434	426	412	380	393	392	348	115	66.6	10.5	1.2	
200	382	373	360	332	318	292	214	19.2	21.1	1.8	.5	
190	346	338	327	300	273	235	144	1.5	4.0			
180	320	312	302	277	244	200	110					
170	300	292	281	256	220	173	88.3					
160	280	271	258	233	196	149	73.6					
150	255	247	233	209	169	127	63.0					
140	223	218	205	183	146	110	56.0					
130	192	190	180	161	131	99.1	52.1					
120	173	172	164	149	122	93.3	47.9					
110	68.2	73.3	79.3	78.0	77.0	48.7	14.0					

TABLES OF IONOSPHERIC DATA

AUGUST 1961 - APRIL 1958

Table 1

Washington, D. C. (38.7° N, 77.1° W) — August 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6	31	275				3.1	2.85
01		4.3	31	280				2.8	2.85
02		4.0	31	275				2.1	2.90
03		3.7	30	280					2.90
04		3.3	31	280					2.95
05		3.1	31	(270)					3.00
06	---	4.5	31	240	---	<120	1.92	2.1	3.25
07	290	5.3	31	230	3.8	111	2.50	2.8	3.25
08	305	5.9	31	220	4.2	107	(2.90)	3.6	3.10
09	320	6.2	31	205	4.5	105	3.20	3.6	3.10
10	320	6.5	30	200	4.7	105	3.32	3.8	3.05
11	345	6.35	30	190	4.8	105	3.48	4.0	2.98
12	350	6.3	31	200	4.8	105	3.55	>3.5	3.00
13	345	6.4	31	200	4.8	107	3.50	3.6	2.90
14	355	6.2	31	210	4.8	105	3.48	3.7	2.90
15	340	6.3	31	215	4.6	107	3.30	3.4	2.90
16	330	6.3	31	220	4.5	109	3.12	>3.3	2.90
17	310	6.5	31	230	4.1	111	2.80	3.0	3.00
18	275	6.5	31	<250		119	2.32	3.0	3.00
19	260	7.2	31	255		---	----	2.8	3.05
20		7.1	31	245				2.9	3.00
21		6.45	30	250				2.8	3.00
22		5.4	29	255					2.98
23		4.8	30	270				1.8	2.90

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Slough, England (51.5° N, 0.6° W) — July 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	29	280				<1.6	2.70
01		4.9	27	275				<1.2	2.75
02		4.7	23	270				1.2	2.75
03		3.9	28	280		---	----	1.4	2.80
04	---	4.0	26	280	---	115	1.40	1.8	2.80
05	370	4.4	27	255	3.3	115	2.00	2.3	2.80
06	365	4.9	28	235	3.8	105	2.50	2.7	2.85
07	400	5.0	28	220	4.1	105	2.85	3.4	2.80
08	390	5.5	28	215	4.4	105	3.10	3.5	2.85
09	335	5.8	28	220	4.5	105	3.30	3.9	3.00
10	355	6.2	28	215	4.6	105	3.40	4.2	3.00
11	355	5.9	28	205	4.7	105	3.50	(4.6)	2.85
12	380	6.0	29	210	4.8	105	3.50	4.0	2.90
13	370	6.0	29	210	4.8	105	3.55	4.0	2.85
14	350	6.0	29	210	4.7	105	3.50	3.8	2.95
15	350	6.0	29	220	4.6	105	3.40	3.6	3.00
16	335	6.0	29	225	4.5	105	3.20	3.4	2.95
17	315	6.1	30	230	4.2	105	2.95	3.3	3.00
18	300	6.1	29	240	3.9	105	2.65	3.6	3.00
19	295	6.4	29	255	---	110	2.20	3.3	3.05
20		6.3	28	255		---	1.70	2.8	3.00
21		6.1	29	250				(2.4)	2.90
22		5.9	28	260				(1.6)	2.80
23		5.6	27	270				<1.6	2.80

Time: 0.0°.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Resolute Bay, Canada (74.7° N, 94.9° W) — June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00	290	5.2	29	240	3.0		2.0		3.0
01	295	4.9	29	230	3.2		2.0		3.0
02	295	5.0	29	230	3.4		2.1		3.0
03	310	5.0	28	230	3.3		2.3		3.0
04	325	4.7	27	220	3.6		2.4		3.0
05	380	4.7	28	220	3.8		2.6		2.9
06	395	5.0	28	215	3.9		2.8		2.8
07	390	4 8	29	210	4.0		2.9		2.6
08	410	5.0	29	210	4.0		3.0		2.75
09	435	5.0	29	205	4.1		3.0		2.6
10	435	5.0	29	205	4.2		3.1		2.7
11	440	5.1	27	200	4.3		3.1		2.7
12	420	5.2	28	205	4.3		3.1		2.6
13	410	5.2	30	200	4.3		3.1		2.7
14	415	5.2	29	200	4.3		3.1		2.7
15	400	5.3	28	200	4.2		3.0		2.75
16	410	5.2	29	205	4.1		3.0		2.7
17	400	5.3	29	200	4.1		2.9		2.7
18	370	5.2	29	210	4.0		2.9		2.8
19	340	5.2	28	210	3.9		2.7		2.9
20	340	5.4	29	220	3.7		2.5		2.9
21	315	5.2	28	230	3.5		2.4		2.9
22	300	5.2	28	235	3.3		2.3		2.9
23	290	5.2	29	230	3.3		2.2		3.0

Time: 90.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 4

Tromso, Norway (69.7° N, 19.0° E) — June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	5.1	10	---	----	---	----	4.0	(2.85)
01	(310)	5.1	11	---	----	---	----	4.3	(2.70)
02	---	5.3	13	(255)	----	---	----	4.0	(2.75)
03	350	5.2	18	(255)	3.30	---	----	4.2	2.80
04	350	5.2	24	245	3.60	105	2.60	3.0	2.70
05	375	5.4	22	230	3.85	105	2.45	2.7	2.70
06	405	5.2	22	230	4.05	105	2.70	3.0	2.70
07	385	5.7	21	215	4.20	100	2.85	2.8	2.80
08	370	5.8	24	210	4.30	105	3.00		2.85
09	375	5.9	26	220	4.40	105	3.00		2.90
10	390	5.8	26	210	4.45	100	3.10	3.4	2.80
11	360	6.0	25	225	4.55	100	3.15	3.5	2.85
12	370	5.8	25	210	4.50	100	----	3.5	2.85
13	355	5.8	26	210	4.45	105	3.20		2.90
14	375	5.7	24	210	4.40	105	3.00		2.90
15	380	5.6	26	210	4.35	105	3.00		2.90
16	360	5.5	26	210	4.20	105	2.90	3.0	2.90
17	345	5.5	29	240	4.00	105	2.80	3.2	2.90
18	(350)	5.5	24	230	4.00	105	2.60	3.8	3.05
19	---	5.4	23	245	----	105	2.45	3.2	3.00
20	---	5.3	23	255	----	110	----	3.5	2.95
21	---	5.0	15	---	----	105	----	3.7	(2.90)
22	---	(5.4)	8	---		115	----	4.3	(2.80)
23	---	(5.0)	8	---		---	----	4.2	----

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 5

Kiruna, Sweden (67.8° N, 20.4° E) — June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	11	285		---	---	4.1	(2.8)
01	---	5.3	13	280	---	---	---	4.1	2.8
02	(320)	5.2	18	260	2.9	---	1.8	4.6	2.8
03	355	5.0	19	250	3.2	---	2.0	4.5	2.75
04	350	5.0	23	240	3.5	105	2.2	5.0	2.7
05	350	5.2	24	230	3.8	105	2.4	4.7	2.7
06	350	5.4	25	220	4.0	105	2.6	5.2	2.7
07	385	5.4	28	215	4.2	105	2.8	5.6	2.7
08	370	5.6	29	215	4.3	105	2.9	4.0	2.7
09	355	5.8	29	210	4.4	105	3.0	4.3	2.7
10	365	5.8	30	215	4.5	105	3.0	5.2	2.8
11	360	5.8	30	210	4.5	100	3 1	5.0	2.9
12	365	5.8	29	210	4.5	100	3.1	4.4	2.8
13	350	5.8	29	210	4.5	105	3.1		2.8
14	360	5.7	29	210	4.5	105	3.0		2.8
15	350	5.6	30	210	4.4	105	2.9	4.8	2.9
16	350	5.5	30	220	4.2	105	2.8		2.9
17	320	5.5	28	225	4.0	105	2.7		2.9
18	310	5.4	26	235	3.8	110	2.5	3.7	3.0
19	295	5.4	26	240	3.5	110	2.3	4.0	2.9
20	(285)	5.2	24	250	3.2	110	2.0	3.8	3.0
21	---	5.0	18	270		---	1.6	4.7	2.8
22	---	5.1	19	300		---	---	5.0	2.8
23	---	5.3	13	300		---	---	4.2	2.8

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 6

Sodankyla, Finland (67.4° N, 26.6° E) — June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	14	290		---	----	(3.4)	2.85
01		4.9	13	290		---	----	(3.6)	2.80
02		4.8	10	280		---	----	3.5	2.80
03		5 0	13	260		---	----	(3.5)	2.80
04		5.1	15	240	---	115	2.00	(3.6)	2.80
05		5.4	15	230	3.7	115	2.30	(3.6)	2.80
06		5.4	19	225	3.9	110	2.50	(3.7)	2.80
07		5.6	22	220	4.2	110	2.80	(3.9)	2.80
08		5.8	20	215	4.3	105	2.95	(4.2)	2.75
09		5.9	27	220	4.4	105	3.05	4.3	2.80
10		6.0	26	210	4.5	105	3.10	4.2	2.85
11		5.9	24	210	4.5	105	3.20	4.3	2.80
12		6.2	24	210	4.6	115	3.35	(4.4)	2.90
13		5.9	26	210	4.6	110	3.30	(4.3)	2.90
14		5.8	25	215	4.6	110	3.20		2.90
15		5.7	23	210	4.4	115	3.15		2.90
16		5.6	24	210	4.2	110	3.05	4.0	2.90
17		5.6	27	220	4.2	110	2.90	3.6	2 90
18		5.7	27	230	---	110	2.75		3.00
19		5.6	22	240		120	2.50	3.4	3.00
20		5.7	20	250		120	2.30	3.4	3.00
21		5.4	16	260		125	2.00	3.3	2.95
22		5.3	17	260		145	1.90	3.2	2.90
23		5.0	14	280		---	----	(3.3)	2.80

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 7

Lulea, Sweden (65.6° N, 22.1° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.8)	16	280		---	---	(2.0)	2.9
01		4.6	19	300		---	---	(2.2)	2.85
02	---	4.8	19	280	---	150	1.8	2.0	2.8
03	340	5.0	18	250	3.2	140	2.0	2.3	2.9
04	370	5.0	24	240	3.4	125	2.3		2.8
05	370	5.4	21	225	3.8	120	2.5	2.3	2.8
06	360	5.3	21	225	4.0	110	2.7		2.8
07	370	5.6	20	230	4.3	110	2.9		2.8
08	375	5.8	22	230	4.4	105	3.1		2.8
09	370	6.0	23	225	4.4	105	3.2		2.8
10	360	6.1	23	220	4.5	105	3.3		2.8
11	365	6.0	26	220	4.5	105	3.4		2.85
12	360	5.9	24	220	4.4	110	3.4		2.9
13	360	5.8	26	210	4.6	110	3.3		2.9
14	360	5.8	22	215	4.4	110	3.3		2.85
15	360	5.7	25	210	4.4	110	3.2		2.9
16	350	5.6	26	235	4.3	110	3.0		2.9
17	335	5.7	27	235	4.0	110	2.8		3.0
18	---	5.7	26	235	---	120	2.6		2.9
19		5.7	24	240		130	2.3	2.1	3.0
20		5.5	25	250		140	2.0	(2.3)	3.0
21		5.5	21	265		---	1.7	(2.3)	2.9
22		5.2	19	275		---	1.6	(1.8)	2.9
23		4.9	17	280				(2.3)	3.0

Time: 15.0°E.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 8

Lycksele, Sweden (64.6° N, 18.8° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.8	29	270				3.5	2.8
01		4.8	28	290		---	----	3.0	2.75
02	(315)	4.6	28	270	2.60	---	(1.60)	3.6	2.7
03	320	4.9	28	250	3.00	105	1.75	3.5	2.7
04	340	4.8	27	235	3.50	110	2.00	3.8	2.7
05	360	5.3	28	220	3.80	100	2.30	4.0	2.7
06	365	5.4	28	215	4.00	100	2.50	3.9	2.7
07	370	5.5	28	210	4.20	100	2.70	4.7	2.7
08	350	5.8	28	210	4.30	100	2.90	5.0	2.7
09	360	5.9	28	200	4.40	100	3.00	5.0	2.7
10	365	5.9	27	205	4.50	100	3.10	5.3	2.7
11	350	6.0	26	205	4.55	100	3.10	4.1	2.7
12	350	5.9	28	200	4.50	100	3.15	4.7	2.75
13	350	5.8	29	205	4.50	100	3.10	3.8	2.8
14	350	5.8	29	200	4.40	100	3.00	3.6	2.8
15	340	5.8	27	210	4.30	100	3.00	3.6	2.8
16	340	5.8	26	215	4.20	105	2.90	3.6	(2.8)
17	325	(5.7)	28	230	4.10	110	2.70	3.6	2.8
18	315	5.7	30	230	3.90	110	2.40	3.7	2.8
19	(300)	5.8	26	235	3.50	110	2.20	4.0	2.9
20	---	5.6	28	240	----	115	1.90	3.6	2.8
21	---	5.3	29	250	----	115	1.60	2.8	2.8
22		5.3	29	270		115	1.35	2.6	2.8
23		5.0	28	260		---	----	3.0	2.75

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Table 9

Nurmijarvi, Finland (60.5° N, 24.6° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.4)	4	280					----
01		(5.4)	4	280					----
02		(5.1)	7	290					(3.10)
03		(5.0)	7	290					(3.00)
04		5.0	14	260	---		----		3.00
05		5.2	16	230	3.5		2.00	2.3	3.00
06		5.6	18	220	3.8		2.40	2.6	3.00
07		5.6	18	210	4.1		2.70	3.1	3.10
08		5.9	20	220	4.2		2.90	3.3	3.10
09		6.1	23	210	4.4		3.00	3.8	3.00
10		6.2	23	220	4.4		3.10	4.0	3.05
11		6.2	24	220	4.6		3.20	4.5	3.10
12		6.3	28	210	4.6		3.30		3.10
13		6.1	24	210	4.6		3.25		3.10
14		6.0	27	205	4.6		3.20	3.5	3.10
15		6.0	26	210	4.5		3.00		3.10
16		5.8	29	210	4.3		3.10		3.10
17		5.8	24	210	4.2		2.95	3.0	3.10
18		5.8	25	220	---		2.70	3.2	3.15
19		6.0	20	230	---		2.40	3.0	3.20
20		6.2	14	260			1.95	3.0	3.20
21		(6.5)	9	270					(3.20)
22		(6.8)	5	275					(3.10)
23		(6.4)	4	280					----

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 10

Upsala, Sweden (59.8° N, 17.6° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.3	29	260		---	----	2.4	2.8
01		5.1	29	270		130	1.20	2.5	2.8
02		4.8	28	270		125	1.20	2.6	2.8
03	---	4.9	29	260	----	105	1.50	3.2	2.8
04	350	5.1	27	240	3.20	105	1.90	4.2	2.8
05	350	5.3	29	225	3.75	105	2.30	4.3	2.8
06	360	5.5	29	215	4.10	100	2.50	4.4	2.8
07	345	5.8	29	210	4.30	100	2.70	5.0	2.9
08	360	6.0	29	210	4.40	100	3.00	4.7	2.8
09	350	6.2	29	205	4.60	100	3.10	5.5	2.9
10	350	6.3	29	205	4.65	100	3.20	4.5	2.9
11	340	6.4	29	205	4.70	100	3.30	4.7	2.9
12	350	6.2	29	210	4.70	100	3.30	4.9	3.0
13	355	6.1	27	205	4.70	100	3.30	4.8	2.9
14	350	6.1	28	210	4.70	100	3.20	4.5	2.9
15	345	6.0	29	210	4.50	100	3.15	4.6	2.9
16	340	6.0	29	210	4.40	100	3.00	4.4	2.9
17	315	6.0	28	220	4.30	105	2.70	4.7	3.0
18	300	6.1	29	230	3.90	105	2.50	4.4	3.0
19	---	6.1	29	240		105	2.20	4.0	3.0
20		6.1	29	255		120	1.75	3.3	3.0
21		6.1	29	255		110	1.20	2.3	2.9
22		6.2	28	255		125	1.00	2.3	2.9
23		5.9	29	255		---	----	2.4	2.8

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Table 11

Churchill, Canada (58.8° N, 94.2° W) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.4	24	290				5.2	---
01		4.5	27	275			---	5.8	(2.9)
02		4.2	29	270			---	4.7	(3.0)
03	---	4.1	28	270			1.6	4.5	(2.9)
04	---	4.2	28	275	---		2.0	3.8	(2.95)
05	410	4.3	27	240	3.6		2.3	3.8	(2.5)
06	400	4.5	23	250	3.9		2.7	4.4	2.8
07	420	5.0	19	235	4.2		3.0	4.2	2.7
08	440	5.0	22	220	4.3		3.2	4.3	2.65
09	420	5.3	21	220	4.5		3.2	>4.0	2.7
10	410	5.4	24	215	4.5		3.3	3.8	2.8
11	420	5.4	27	205	4.5		3.4		2.8
12	450	5.4	28	210	4.6		3.4		2.7
13	425	5.5	28	205	4.5		3.4		2.7
14	420	5.6	30	205	4.5		3.3		2.7
15	400	5.8	30	210	4.4		3.3		2.7
16	395	5.9	30	210	4.4		3.2		2.8
17	370	5.9	30	220	4.2		3.0		2.9
18	335	5.8	30	240	4.0		2.9		2.9
19	320	5.4	30	265	3.7		2.7		3.0
20	---	5.2	28	290			2.4	3.1	3.0
21		4.8	28	290			2.3	5.8	2.9
22		4.9	26	295			---	6.0	(3.0)
23		4.8	24	270				8.4	(2.95)

Time: 90.0°W.
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 12

De Bilt, Holland (52.1° N, 5.2° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.8	28	280					2.80
01		5.2	28	280					2.85
02		4.9	28	290					2.85
03		4.7	28	290				2.8	2.90
04	300	5.0	28	260	3.0	---	1.9	3.1	2.95
05	340	5.8	28	240	3.7	121	2.2	3.0	2.80
06	320	5.9	27	230	4.0	118	2.6	3.6	2.95
07	340	6.0	27	225	4.4	116	2.9	4.0	2.95
08	320	6.2	29	215	4.5	110	3.1	3.8	3.00
09	330	6.2	28	215	4.7	110	3.2	4.1	2.95
10	330	6.3	29	210	4.8	109	3.4	4.2	2.95
11	350	6.3	28	210	4.8	108	3.4	4.8	2.90
12	350	6.1	27	200	4.8	108	3.5	4.3	2.95
13	350	6.1	30	220	4.8	109	3.4	4.9	2.90
14	340	6.2	29	215	4.7	110	3.4	4.0	2.95
15	350	6.1	29	215	4.7	110	3.3	4.0	3.00
16	320	6.3	29	225	4.4	114	3.0	4.2	3.00
17	310	6.3	29	230	4.1	120	2.8	4.4	3.00
18	290	6.8	30	260	3.8	120	2.3	3.7	3.00
19	280	7.0	29	260		---	1.9	4.4	3.05
20		6.9	29	260				2.9	3.00
21		6.9	29	260					2.95
22		6.7	29	270					2.90
23		6.1	29	270					2.85

Time: 0.0°.
Sweep: 1.8 Mc to 18.0 Mc in 4 minutes.

Table 13

Slough, England (51.5° N, 0.6° W) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.9	24	260				1.2	2.80
01		5.6	24	270				1.3	2.80
02		5.1	26	270				1.0	2.80
03		4.8	25	270		---	----	1.4	2.80
04	360	4.8	26	265	---	125	1.55	1.7	2.80
05	325	5.5	24	240	---	110	2.10	2.3	2.95
06	305	5.6	21	230	3.8	110	2.60	3.0	3.00
07	315	6.0	26	230	4.2	105	2.95	3.4	3.05
08	325	6.0	26	215	4.4	105	3.20	3.8	3.05
09	355	6.1	23	215	4.6	105	3.35	4.2	2.95
10	340	6.2	25	210	4.7	105	3.50	4.1	3.00
11	350	6.2	25	210	4.8	105	3.60	4.2	2.95
12	345	6.2	26	205	4.8	105	3.60	4.4	3.00
13	350	6.2	26	210	4.6	105	3.60	4.0	2.95
14	345	6.2	27	210	4.7	105	3.60	3.9	3.00
15	350	6.1	29	210	4.7	105	3.40	4.2	2.95
16	330	6.2	23	220	4.5	105	3.20	3.8	2.95
17	320	6.4	25	230	4.3	105	2.95	(4.1)	3.00
18	300	6.6	25	240	---	110	2.60	(4.0)	3.05
19	280	6.8	24	245		115	2.20	(3.8)	3.05
20		6.8	24	260		---	1.65	(2.8)	3.00
21		7.1	26	250				(2.0)	3.00
22		6.9	25	255				1.6	2.90
23		6.4	23	255				1.6	2.80

Time: 0.0°.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 14

Dourbes, Belgium (50.1° N, 4.6° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.7	29	270				1.6	2.90
01		5.2	29	270				1.4	2.85
02		5.0	29	280				1.4	2.85
03		4.7	28	290		---	E	1.5	2.90
04	(340)	4.8	29	270	----	(125)	1.60	1.9	2.90
05	330	5.2	29	250	3.55	115	2.10	2.5	3.00
06	330	5.8	29	(235)	3.90	111	2.50	3.1	3.05
07	330	6.0	28	245	4.05	109	2.90	3.6	3.00
08	325	6.2	28	235	4.45	107	3.10	3.9	3.05
09	340	6.0	28	235	4.50	107	3.30	3.9	3.00
10	340	6.3	26	(235)	4.60	107	3.40	4.0	3.05
11	340	6.4	27	(225)	4.80	107	3.40	4.0	3.05
12	345	6.3	26	(210)	4.75	107	3.45	4.0	3.10
13	350	6.4	26	(225)	4.70	107	3.50	3.9	2.95
14	330	6.2	26	(220)	4.50	107	3.45	3.9	3.05
15	340	6.0	26	250	4.50	107	3.30	4.0	3.00
16	320	6.4	28	(235)	4.50	107	3.05	3.6	3.05
17	315	6.4	28	270	4.00	111	2.70	3.7	3.05
18	300	6.7	29	(275)	----	119	2.30	3.5	3.05
19	(280)	6.8	29	<275		129	1.75	3.2	3.10
20		7.0	27	260		142	----	2.5	3.15
21		7.0	27	260				2.5	3.00
22		6.6	29	255				1.7	2.95
23		6.0	29	270				1.7	2.90

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 3 minutes.

Table 15

Pruhonice, Czechoslovakia (50.0° N, 14.6° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	28	260		---	---	2.8	
01		5.4	28	250		---	---	1.3	
02		5.0	28	255		---	---	2.1	
03		5.1	28	260		---	1.5	1.7	
04		5.4	28	240		105	2.0	2.3	
05		5.8	27	230		100	2.4	3.0	
06		6.2	28	220		100	2.8	3.5	
07		6.3	29	210		95	3.1	3.8	
08		6.7	27	205		95	3.2	4.0	
09		6.6	28	205		95	3.4	4.1	
10		6.6	29	205		95	3.4	4.2	
11		6.6	28	205		95	3.4	4.3	
12		6.6	27	200		95	3.4	4.2	
13		6.3	26	205		95	3.4	4.0	
14		6.4	28	200		95	3.4	3.7	
15		6.4	28	205		95	3.2	3.8	
16		6.5	27	215		100	3.0	3.8	
17		6.7	25	240		100	2.5	3.6	
18		7.0	22	250		105	2.0	4.7	
19		7.4	21	250		---	---	4.2	
20		7.2	23	245		---	---	2.8	
21		7.0	23	250		---	---		
22		6.5	23	250		---	---		
23		6.2	26	270		---	---		

Time: 0.0°.
Sweep: 1.0 Mc to 18.0 Mc.

Table 16

Winnipeg, Canada (49.9° N, 97.4° W) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.8	27	300			---	2.1	2.8
01		3.5	28	300			---	2.8	2.8
02		3.2	26	300			---	4.2	2.8
03		3.3	24	300			---	4.0	2.8
04		3.2	24	300			---	3.3	2.9
05	(470)	3.7	27	270	3.0		1.9		2.95
06	435	4.2	26	225	3.5		2.4		2.8
07	430	4.6	28	220	4.0		2.8		2.7
08	425	4.8	28	210	4.1		3.0		2.7
09	440	5.1	27	200	4.4		3.2		2.6
10	415	5.5	27	200	4.5		3.3		2.7
11	400	5.6	26	200	4.7		3.4	3.4	2.8
12	400	5.6	25	205	4.6		3.5		2.8
13	400	5.7	27	210	4.6		3.6		2.75
14	415	5.6	28	210	4.7		3.5		2.8
15	395	5.7	29	215	4.6		3.4		2.8
16	380	5.8	30	210	4.4		3.3		2.8
17	350	5.9	28	210	4.3		3.1		2.9
18	320	6.0	28	230	4.0		2.8		2.9
19	290	6.0	30	240	3.5		2.4		3.0
20	---	6.2	28	265	---		2.0		3.0
21		6.0	27	250			---		3.0
22		5.3	27	250					2.9
23		4.5	27	<280					2.9

Time: 90.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 17

St. John's, Newfoundland (47.6° N, 52.7° W) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	27	270					2.8
01		4.2	27	280					2.8
02		3.8	28	260					2.8
03		3.4	27	270					2.9
04		3.9	27	255					3.1
05	360	4.2	30	225	3.6		2.40	2.7	3.05
06	360	4.7	30	220	3.9		2.75	3.4	3.0
07	380	5.1	29	205	4.1		3.00	4.4	2.9
08	395	5.2	28	215	4.4		3.35	5.0	2.9
09	390	5.4	28	200	4.5		3.50	4.0	2.8
10	405	5.5	29	205	4.7		----	4.0	2.75
11	380	5.8	30	200	4.7		----	4.0	2.8
12	395	5.6	30	200	4.8		3.65	4.0	2.8
13	385	6.0	30	210	4.7		3.55	3.6	2.85
14	350	6.0	30	205	4.6		3.40		2.9
15	350	6.0	30	205	4.5		3.20		2.9
16	330	6.0	30	205	4.3		3.00		2.9
17	310	6.2	28	210	---		2.75	4.4	2.9
18	(300)	6.6	30	260	---		----	4.6	2.9
19		6.8	29	260				4.6	2.9
20		6.4	24	250				3.8	2.9
21		(6.0)	27	250				3.0	(2.8)
22		5.8	24	250					2.8
23		5.4	27	270					2.8

Time: 60.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 18

Graz, Austria (47.1° N, 15.5° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>5.7	26	300					
01		>5.6	28	290					
02		(5.4)	26	290					
03		(5.0)	25	290					
04		5.0	25	300					
05	(350)	5.4	27	250	(3.3)			2.7	
06	330	(6.0)	28	240	3.8			3.3	
07	310	6.5	24	(240)	4.2	130	2.9	(3.7)	
08	340	6.4	24	<250	4.5	120	3.1	(3.8)	
09	330	>6.5	27		4.6	120	3.2	(4.1)	
10	345	(6.8)	23		4.7			(4.3)	
11	360	>6.8	28		4.9			4.2	
12	350	(6.7)	29		4.8			3.4	
13	350	6.8	27		4.8			3.1	
14	350	6.6	26		4.8			3.3	
15	340	(6.5)	29		4.7			3.3	
16	340	(6.7)	25	<270	4.3	130	3.0	3.4	
17	315	(6.6)	26	(245)	4.2	130	2.9	3.8	
18	300	>6.7	25	250				3.4	
19		(7.0)	26	280				(3.6)	
20		>6.8	27	265				(3.2)	
21		>6.6	26	275				2.8	
22		(5.7)	25	280				3.0	
23		>5.6	25	290					

Time: 15.0°E.
Sweep: 2.0 Mc to 13.0 Mc in 50 seconds.

Table 19

Sottens, Switzerland (46.6° N, 6.7° E) June 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.2	28	270				3.1	2.90
01		5.8	27	270					2.85
02		5.5	27	270					2.85
03		5.2	25	280					2.80
04	---	5.0	27	275	---	---	---		2.90
05	(360)	5.2	26	260	3.3	120	1 9	3.0	2 85
06	330	5.8	27	240	3.6	120	2.3	3.6	3.00
07	295	6.1	27	230	4.0	100	2.7	4.0	3.05
08	300	6.6	24	(230)	4.2	100	2.9	4.9	3.10
09	300	6.4	25	(220)	4.5	100	3.2	5.0	3.10
10	320	6.5	23	(215)	4.8	100	3.3	5.0	3.05
11	325	6.7	23	(200)	4.7	100	3.4	5.0	3 05
12	340	6.7	23	200	4.8	100	3.4	4.3	3.05
13	350	6.6	25	200	4.7	100	3.4	3.7	3.00
14	350	6.6	25	210	4.7	100	3.4	3.8	3.00
15	340	6.6	25	210	4.7	100	3.3	4.2	3.00
16	330	6.6	25	220	4.6	100	3.2	4.1	3.00
17	320	6.7	27	(220)	4.3	100	3.0	4.7	3.00
18	300	6.8	28	230	4.0	110	2.7	4.5	3.10
19	---	6.7	24	265	---	120	2.2	4.1	3.15
20		6.8	21	255				4.2	3.25
21		7.1	19	250				4.0	3.15
22		6.6	25	260				3.2	3.00
23		6.5	28	270				3.0	3.00

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 20

Ottawa, Canada (45.4° N, 75.9° W) June 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.2	28	280				3.0	(2.9)
01		4 0	26	290				3.7	---
02		3.5	27	280				3.0	---
03		(3.1)	29	300				3.6	
04		3.0	28	<300				3.1	---
05	(450)	3.8	30	250	---		2.0	3.0	3.2
06	440	4.2	30	240	3.8		2.5	3.5	3.0
07	395	4.8	30	230	4.1		2.8	4.1	3.0
08	440	5.0	29	220	4.2		3.1	4.1	3.0
09	400	5.2	27	210	4.5		3.4	4.0	2.9
10	400	5.5	27	200	4.5		---	4.0	3.0
11	420	5.5	29	200	4.7		3.6	4.0	2.85
12	400	5.6	30	200	4.8		---	4.0	2.9
13	420	5.7	30	200	4.8		3.6	4.1	2.9
14	390	5.8	29	220	4.7		3 6	4.0	2.9
15	395	5.9	29	210	4.6		3.4	3.5	2.9
16	380	6.0	30	220	4.4		3.2	3.4	2.9
17	350	6.1	29	230	4.1		3.0	4.5	3.0
18	300	6.2	29	250	(3.9)		2.6	4.8	3.0
19	(280)	6.5	29	270			---	4.5	3.0
20		6.2	30	250			---	4.2	3.0
21		6.2	29	250				3.6	3.0
22		5.6	29	260				2.4	3.0
23		5.2	28	275					(3.0)

Time: 75.0 W
Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 21

Rome, Italy (41.8° N, 12.5° E) June 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.3)	23	290				3.4	(2.75)
01		(6.0)	21	290				3 2	(2.70)
02		5.9	25	290				3.4	2.75
03		5.9	25	290				3.4	2 75
04		5.5	27	280				3.3	2.80
05		5.6	28	260		150	1.7	3.0	2.80
06	---	6.3	28	250	---	120	2.3	3.8	2.90
07	(300)	6.9	24	240	4.0	110	2.7	4.6	2.95
08	(330)	6.6	25	(230)	4.2	110	3.0	5.3	3.00
09	320	7.0	24	220	4.6	110	3.3	4.9	3.00
10	330	6.8	24	(210)	4.8	110	3.4	5.6	2.90
11	360	7.0	23	220	4.8	110	3.5	5.5	2.85
12	350	7.2	25	210	4.9	110	3.5	5.3	2.90
13	340	7.3	28	210	4.9	110	3.6		2.85
14	350	7.3	29	210	4.8	110	3.5	4.5	2.85
15	340	7.3	27	230	4.8	110	3.4	4.5	2.90
16	310	7.6	27	240	4.5	110	3.2	4.4	2.90
17	---	7.5	25	240	---	110	3.0	5.6	2.95
18	---	(7.5)	25	240	---	110	2.5	4.8	2.90
19		(8.0)	16	260		140	1.8	4.3	(2.90)
20		(8.3)	13	260				4.2	(2.90)
21		(8.0)	11	250				4.8	(2.90)
22		(6.9)	15	280				4.4	(2.80)
23		(6.4)	11	270				4.3	(2.80)

Time: 15.0°E
Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 22

Formosa, China (25.0° N, 121.5° E) June 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	10	300				(3.8)	(2.75)
01		7.6	10	270				(3.8)	(3.20)
02		5.6	16	260				(3.3)	3.00
03		5.4	16	260				(2.6)	(3.00)
04		5.4	15	270				(2.9)	2.90
05		4.5	17	(270)				(3.5)	3.15
06		6.2	26	240		---	---	(4.0)	3.25
07	(260)	6.8	22	(230)		(111)	---	(4.8)	3.20
08	(305)	6.8	24	(220)	(4.7)	<111	---	(6.2)	3.00
09	390	7.0	25	(240)	4.9	(109)	---	(6.7)	2.70
10	410	7.7	23	(210)	(5.0)	<111	---	(6.8)	2.55
11	400	8.6	27	(205)	(4.8)	(109)	---	(6.0)	2.60
12	380	9.2	28	210	5.0	<111	---	(5.0)	2.65
13	370	>9.6	28	220	(4.9)	(109)	---	(6.4)	2.75
14	350	>10.4	28	(220)	4.8	<109	---	(5.4)	2.75
15	335	11.1	28	215	4.7	(109)	---	(5.4)	2.90
16	300	11.3	29	(240)	(4.5)	114	---	(5.1)	(2.95)
17	290	(9.8)	30	(240)	(4.1)			(4.4)	3.00
18	(260)	>9.0	29	245				(4.0)	3.05
19		>8.2	30	(250)				(3.8)	2.85
20		7.2	28	(280)				(3.1)	2.80
21		6.8	24	(320)				(3.6)	2.70
22		(6.8)	20	>335				(4.0)	(2.70)
23		7.0	13	(330)				(3.9)	2.70

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 23

El Cerillo, Mexico (19.3° N, 99.5° W) June 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	23	280				2.8	2.90
01		6.3	23	270				2.9	3.00
02		6.2	23	260				2.4	3.00
03		5.9	23	250				3.2	3.10
04		5.4	23	250				2.0	3.10
05		5.0	23	250				3.2	3.10
06		4.8	23	260				2.6	3.20
07	---	5.8	23	230	---	103	2.20	2.8	3.20
08	(350)	6.8	26	210	4.4	101	2.70	3.4	3.00
09	380	7.5	27	200	4.8	101	3.10	4.2	2.90
10	350	8.1	28	200	4.9	101	3.40	4.0	2.80
11	380	8.4	27	190	5.0	101	3.55	3.9	2.70
12	375	9.4	28	200	5.0	102	3.65	4.1	2.70
13	360	9.9	30	210	5.0	101	3.70	3.8	2.80
14	330	10.6	30	220	4.9	103	3.70	4.2	2.90
15	330	10.1	28	220	4.8	103	3.55	4.2	2.90
16	315	10.1	30	220	4.6	103	3.20	3.8	2.90
17	330	10.3	30	220	4.4	103	2.95	3.5	3.00
18	---	10.0	29	240	---	105	2.40	3.2	3.10
19		9.5	30	250				3.6	3.20
20		9.0	30	230				2.8	3.10
21		7.8	28	240				2.6	3.10
22		6.9	24	245				2.2	3.00
23		6.6	24	260				2.7	2.95

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 24

Baguio, P. I. (16.4° N, 120.6° E) June 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.6)	17	340				2.6	(2.70)
01		5.1	21	320					2.75
02		(5.0)	23	320					(2.80)
03		4 9	21	290					2.95
04		4.7	21	275					3.10
05		4.0	24	<280				2.6	2.95
06		6.0	29	265		---	----	3.0	3.05
07	---	7.0	30	<260		123	(2.65)	5.6	2.90
08	---	7.4	29	<260		119	(3.10)	5.7	2.65
09	440	7.8	29	<250	(4.9)	119	(3.45)	5.7	2.40
10	450	8.5	30	(240)	(4.9)	(121)	(3.60)	5.1	2.30
11	450	8.9	30	(225)	(4.8)	119	(3.70)	4.8	2.25
12	445	9.3	29	(240)	(4.9)	---	----	4.5	2.25
13	450	9.6	27	(240)	(4.8)	---	----	>4.4	2.40
14	420	9.8	29	(235)	(4.8)	123	(3.50	4.5	2.35
15	400	10.0	30	<260	(4.6)	<129	(3.35)	4.5	2.50
16	365	(10.3)	30	285	---	(124)	(3.05)	5.0	(2.60)
17	(320)	>10.0	28	260		<127	(2.50)	4.7	(2.70)
18		>9.8	30	275				3.8	(2.80)
19		(9.5)	30	285				3.6	(2.75)
20		8.7	30	325				2.9	2.65
21		7.5	30	350				2.6	2.60
22		(5.8)	25	375				2.3	(2.55)
23		5.2	19	380				2.4	(2.60)

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 25

Townsville, Australia (19.3° S, 146.7° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>3.5	12	260					(3.00)
01		3.4	19	250					3.05
02		3.3	19	250					3.15
03		(3.2)	13	255					(3.25)
04		>2.9	18	250					(3.30)
05		3.0	22	250					3.10
06		3.1	26	250					3.20
07		>5.3	24	240			1.90		(3.35)
08		6.5	27	230			2.65		3.50
09		>7.0	24	225	---		3.00	3.2	3.45
10		7.4	24	230	4.4		3.20	3.7	3.45
11		7.5	26	210	4.5		3.30	3.8	3.40
12		>7.5	24	210	4.5		3.40	4.0	3.40
13		7.4	24	210	4.5		3.35	4.0	3.30
14		>7.1	28	210	4.4		3.30	4.0	3.30
15		7.0	26	210	4.0		3.10	3.9	3.25
16		>7.0	24	240			2.80	3.9	3.40
17		6.8	26	240			(2.10)	4.0	3.40
18		5.8	21	240				3.8	3.30
19		4.6	28	230				3.1	3.40
20		3.7	26	250				2.8	3.10
21		>3.6	21	260				2.2	3.00
22		>3.7	18	260					3.05
23		3.7	13	255					(3.10)

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 26

Johannesburg, Union of S. Africa (26.1° S, 28.1° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.7	28	---				<1.2	2.95
01		2.7	27	---				1.1	2.95
02		(2.8)	27	---				1.2	2.95
03		3.0	27	---				1.5	3.00
04		2.9	27	---				1.1	3.20
05		2.7	27	---				1.3	3.05
06		2.7	27	---				1.3	3.10
07		4.8	27	230			1.7		3.35
08	(230)	6.4	27	225	---		2.4	3.1	3.45
09	240	6.8	27	210	---		2.8	3.6	3.40
10	250	7.2	26	210	4.4		3.1	3.7	3.35
11	250	7.6	25	200	4.6		3.3	3.9	3.35
12	265	7.5	24	205	4.6		3.4	4.0	3.30
13	260	7.2	26	205	4.6		3.3	4.0	3.25
14	260	7.6	26	200	---		3.2	3.8	3.10
15	250	7.7	27	210	---		3.0	3.5	3.20
16	235	7.6	27	230	---		2.6	3.0	3.30
17		6.8	28	225			2.0	2.3	3.35
18		5.2	28	215			---	1.8	3.35
19		3.4	28	(210)				1.8	3.20
20		3.1	28	---				1.7	3.25
21		3.0	28	---				1.7	3.20
22		3.0	28	---				1.4	3.15
23		3.0	28	---				1.4	3.10

Time: 30.0°E.
Sweep: 1.0 Mc to 14.0 Mc in 1 minute 30 seconds.

Table 27

Brisbane, Australia (27.5° S, 152.9° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.9	23						2.80
01		3.8	19						2.85
02		4.0	21						(2.80)
03		4.0	20						(2.85)
04		3.9	25					2.1	(2.90)
05		3.5	24					2.0	2.80
06		3.5	24						2.85
07		5.4	25						3.35
08		6.6	25						3.40
09		7.1	25					3.2	3.30
10		7.5	25					3.5	3.35
11		7.4	25				3.25	3.8	3.35
12		7.0	25				3.25	3.8	3.20
13		7.4	27				3.20	3.8	3.15
14		7.2	26					4.0	3.15
15		7.7	24					4.4	3.25
16		6.8	26					3.6	3.15
17		6.3	26					3.8	3.20
18		4.9	26					3.0	3.10
19		4.0	26					1.8	2.90
20		3.9	25						2.80
21		3.9	23						2.80
22		3.7	19						2.80
23		3.7	19						2.75

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 28

Mundaring, W. Australia (32.0° S, 116.2° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.4	22	260					3.10
01		3.4	25	<265					3.10
02		3.7	25	250					3.15
03		3.8	23	250					3.20
04		3.9	25	<250					3.20
05		3.6	24	230					3.25
06		3.1	25	230					3.30
07		3.6	24	230					3.35
08		6.0	24	215			2.00		3.60
09		6.6	22	225			2.60		3.45
10		7.4	25	225	---		3.00		3.40
11		7.5	23	220	4.3		3.10	3.4	3.45
12		7.5	21	215	4.4		3.20	3.5	3.40
13		7.5	23	210	4.4		3.10	3.6	3.30
14		7.6	22	210	4.2		3.00	3.5	3.40
15		7.6	26	225	4.0		2.75		3.40
16		7.3	23	230			2.30		3.40
17		6.2	26	210			----		3.40
18		4.8	25	205					3.40
19		3.7	23	235					3.30
20		3.3	23	240					3.25
21		3.1	22	<240					3.30
22		>3.2	19	260					3.15
23		3.4	21	260					3.10

Time: 120.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 18 seconds.

Table 29

Capetown, Union of S. Africa (34.1° S, 18.3° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.6	30					<1.6	2.90
01		2.8	29					<1.6	2.85
02		2.9	29					<1.6	2.90
03		3.0	29					<1.6	3.00
04		3.0	29					<1.6	3.10
05		3.0	29	---				<1.5	3.20
06		2.7	30	---				<1.4	3.05
07		2.6	30	---				<1.4	3.05
08		4.8	30	225			<1.6		3.45
09	---	6.0	30	225			2.3		3.50
10	245	6.4	30	230	---		2.8	3.0	3.40
11	255	7.0	30	225	---		3.0	3.2	3.40
12	260	7.2	30	215	---		3.1	3.4	3.25
13	270	7.4	30	220	4.4		3.1	3.5	3.20
14	260	7.7	30	225	---		3.1	3.6	3.20
15	250	7.7	30	220	---		2.9	3.4	3.20
16	250	7.8	30	235	---		(2.6)	3.0	3.30
17		7.0	30	225			2.1	2.2	3.35
18		5.1	30	215			<1.6	<1.7	3.40
19		3.4	30	---				<1.6	3.30
20		2.9	30					<1.7	3.25
21		2 8	30					<1.6	3.30
22		2.7	30					<1.6	3.30
23		2.5	30					<1.6	3.10

Time: 30.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 30

Hobart, Tasmania (42.9° S, 147.2° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.1	21						3.00
01		2.2	18						3.00
02		2.4	22						3.00
03		2.4	20						3.10
04		2.2	18						(3.25)
05		2.1	21						3.15
06		2.0	20						(3.20)
07		2.1	21						(3.15)
08		4.5	20					2.8	3.60
09		5.8	21					3.0	3.65
10		6.2	20					3.4	3.65
11		6.5	21					4.0	3.60
12		7.0	23					4.2	3.55
13		6.9	24					4.3	3.50
14		>7.0	23					4.2	3.60
15		7.0	24					3.0	3.50
16		6.8	24					2.1	3.60
17		6.0	24						3.40
18		5.0	24						3.30
19		4.0	24						3.30
20		3.0	22						3.20
21		2.6	23						3.10
22		2.4	22						3.00
23		2.3	21						3.10

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 31

Christchurch, New Zealand (43.6° S, 172.8° E) June 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.3	15	270				<1.7	2.80
01		3.4	19	(280)				<1.7	2.70
02		3.5	21	270				<1.7	2.75
03		3.6	12	260				<1.4	2.85
04		2.8	16	260				<1.3	2.85
05		2.6	15	250				<1.2	2.95
06		2.3	17	240				<1.5	3.05
07		2.2	16	240				<1.5	2.95
08		4.1	27	240		---	(1.7)	2.0	3.20
09		5.9	29	220		110	2.2	2.6	3.45
10		6.2	29	230		110	2.7	2.9	3.45
11	(240)	6.6	30	220		105	2.8	3.2	3.40
12	(240)	6.8	28	220	---	110	2.9	3.5	3.30
13	240	7.0	29	220	---	110	2.9	3.3	3.30
14	240	7.0	27	230		110	2.8	3.3	3.30
15	(240)	6.9	29	220		110	2.6	3.0	3.35
16	---	6.7	29	230		110	2.1	2.6	3.35
17		5.8	30	220		---	(1.6)	2.6	3.30
18		4.9	27	240				2.3	3.00
19		4.3	28	240				<1.8	3.05
20		3.7	27	240				<1.8	2.95
21		3.4	20	260				<1.7	2.90
22		3.4	20	260				<1.7	2.85
23		3.4	16	270				<1.7	2.80

Time: 180.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 7 seconds.

Table 32

Resolute Bay, Canada (74.7° N, 94.9° W) April 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.5	30	260			1.7		3.0
01		4.3	30	265			1.7		2.9
02		4.4	30	<270			1.8		3.0
03		4.3	29	270			1.8		3.0
04	---	4.5	29	260			1.9		3.0
05	---	4.2	29	250	---		2.0		3.0
06	300	4.5	29	250	3.4		2.0		3.0
07	325	4.9	30	240	3.7		2.3		2.9
08	355	4.8	30	230	3.8		2.5		2.9
09	400	4.4	30	220	3.8		2.7		2.8
10	455	4.6	28	220	3.9		2.7		2.65
11	410	5.0	28	220	4.0		2.8		2.8
12	400	4.9	28	220	4.0		2.9		2.7
13	400	5.0	28	220	4.0		2.9		2.8
14	420	4.9	28	230	4.0		2.8		2.7
15	400	5.0	28	220	4.0		2.8		2.8
16	350	5.0	30	225	3.8		2.5		2.8
17	350	5.0	30	230	3.7		2.4		2.9
18	350	5.0	30	245	3.7		2.3		2.9
19	330	4.9	30	260	3.4		2.0		2.9
20	---	5.0	30	270	---		1.9		2.9
21		5.1	30	260			1.8		3.0
22		5.0	30	260			1.8		3.0
23		4.8	30	260			1.7		2.9

Time: 90.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 33

Wakkanai, Japan (45.4° N, 141.7° E) April 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.5	28	310					2.80
01		5.4	28	300					2.75
02		5.2	28	285					2.85
03		5.2	28	260					2.90
04		4.6	28	265					2.90
05		5.0	28	260			1.75		3.15
06		5.7	29	250			2.20		3.30
07	---	6.3	29	245	---		2.70		3.25
08	310	6.8	29	235	4.3		3.00		3.15
09	295	7.2	30	230	4.5		3.10		3.20
10	300	7.8	30	225	4.6		3.20	3.4	3.10
11	290	7.6	30	225	4.8		3.25		3.05
12	300	8.0	30	225	4.8		3.30		3.05
13	300	8.0	30	220	4.9		3.30		3.10
14	300	8.0	30	230	4.8		3.15		3.10
15	285	8.1	30	235	4.6		3.00		3.10
16	---	8.0	30	240	---		2.65		3.15
17		7.7	30	250			2.25		3.20
18		7.6	30	255					3.15
19		7.4	30	250					3.05
20		6.8	30	260					2.95
21		6.2	30	265					2.90
22		5.8	30	290					2.80
23		5.6	30	305					2.80

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 1 minute.

Table 34

Akita, Japan (39.7° N, 140.1° E) April 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.7	30	300					2.75
01		5.6	30	295					2.75
02		5.3	29	290					2.80
03		5.2	29	255					2.95
04		4.7	29	260					2.90
05		5.0	30	255			----		3.00
06	---	6.4	30	245			2.10		3.40
07	(260)	7.0	30	245			2.60		3.30
08	270	7.6	30	240	4.4		3.00	3.4	3.20
09	290	7.8	30	220	(4.6)		3.30	3.7	3.15
10	290	8.6	30	215	4.6		(3.40)	3.8	3.10
11	295	8.7	30	220	(4.9)		3.50	3.8	3.00
12	300	9.0	30	225	5.0		3.50	3.8	3.05
13	300	9.0	30	225	4.8		3.45	3.9	3.05
14	295	9.2	30	225	4.8		3.30	3.4	3.10
15	290	9.0	30	240	---		3.10		3.10
16	270	9.0	30	245	---		2.80	2.9	3.20
17	(260)	8.6	30	250			2.30	2.7	3.20
18		8.6	30	245			----	2.3	3.20
19		7.8	30	245				(2.4)	3.15
20		6.5	30	245				2.4	3.00
21		6.1	30	260				2.2	2.80
22		5.8	29	290				2.0	2.75
23		5.8	29	295					2.70

Time: 135.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 35

Tokyo, Japan (35.7° N, 139.5° E) April 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.7	29	305					2.70
01		5.8	30	300					2.75
02		(5.6)	30	280					(2.80)
03		5.2	30	255					2.95
04		4.6	30	260					2.75
05		4.6	29	260					2.90
06		6.4	29	240			2.20		3.30
07	---	7.1	29	245			(2.65)		3.15
08	270	7.6	29	240	---		3.10	3.2	3.15
09	285	8.3	29	230	4.6		3.35	4.0	3.05
10	300	8.6	30	(230)	---		3.50	4.1	3.00
11	300	9.4	30	230	---		(3.60)	4.1	2.95
12	305	9.6	30	240	---		(3.50)	4.1	2.95
13	300	10.2	30	240	(5.2)		(3.50)	4.0	3 00
14	300	10.5	29	240	---		(3.40)	4.0	2.95
15	285	10.3	29	240	---		3.20	3.5	3.00
16	275	10.0	29	250			(2.85)	3.5	3.10
17	270	9.2	29	250			(2.35)	2.7	3.10
18	---	9.1	29	250			----	2.6	3.20
19		7.8	30	240				2.3	3.15
20		6.2	30	250				2.2	2.95
21		5.6	30	300					2.70
22		5.7	30	305					2.65
23		5.7	29	305					2.70

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 36

Yamagawa, Japan (31.2° N, 130.6° E) April 1961

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	27	305					2.75
01		6.0	25	300					2.80
02		5.8	27	290					2.85
03		5.6	28	250					3.10
04		4.7	29	250					3.00
05		4.2	29	260					2.90
06		5.3	29	245			----		3.25
07		(6.9)	30	240			2.40	2.5	(3.40)
08	---	7.6	30	240			2.85	3.2	3.35
09	(270)	8.3	29	230			3.25	3.6	3.10
10	(290)	8.9	28	220	---		3.50	3.8	3.00
11	305	9.8	28	220	---		----	4.1	2.90
12	310	11.0	28	240	5.2		----	4.0	2.90
13	310	12.1	28	250	(5.2)		----	4.3	2.95
14	295	12.2	29	240	5.1		----	3.8	3.00
15	290	12.4	29	250	(4.9)		3.40	4.0	3.00
16	280	12.0	30	230	---		3.15	3.5	3.05
17	(270)	11.1	30	250			2.80	3.1	3.10
18		11.1	30	250			2.15	3 0	3.20
19		(9.8)	29	240				(3.1)	(3.20)
20		(7.3)	25	235				(2.4)	(3.05)
21		6.1	25	270				2.6	2.75
22		(6.2)	25	320				2.2	(2.65)
23		(6.2)	25	320				2.5	(2.70)

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 37

Reykjavik, Iceland (64.1° N, 21.8° W) June 1960

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	9	<350				3.6	(2.75)
01		(4.15)	8	(360)		---	----	4 0	----
02		(4.5)	5	---		---	----	4.2	----
03		(4.9)	10	(350)		---	----	3.8	(2.70)
04	---	4.8	13	310	---	<123	----	2.9	2.75
05	(400)	5.55	12	245	3.7	112	2.50		2.80
06	(370)	5.3	15	240	4.0	111	(2.70)		2.70
07	(485)	5.0	17	230	4.2	110	3.00		2.72
08	420	5.2	19	230	4.4	109	3.20		2.85
09	400	5.3	21	220	4.6	105	3.30		2.78
10	460	5.6	21	210	4.7	102	3.40		2.65
11	480	5.8	24	220	4.8	103	(3.42)		2.60
12	425	6.0	27	220	4.8	104	3.50		2.70
13	450	5.9	26	220	4.8	104	3.50		2.60
14	440	6.0	27	220	4.8	107	3.50		2.70
15	440	5.9	29	220	4.7	109	(3.40)		2.65
16	420	6.0	28	(240)	4.7	109	3.30		2.75
17	400	5.8	26	245	4.6	109	>3.20		2.75
18	365	5.9	25	255	4.4	114	3.10		2.90
19	(400)	5.75	22	295	---	127	3.50	3.6	2.95
20	(420)	5.45	22	320	---	125	3.20		2.82
21		5.0	20	310		<123	3.10		2.92
22		(5.2)	17	330		111	----	3.2	2.90
23		4.8	13	320		---	----	3.0	2.85

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 38

La Paz, Bolivia (16.5° S, 68.1° W) June 1960

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.55	24	220					3.15
01		7.2	27	225					3.15
02		6.7	27	230					3.10
03		6.0	27	240					3.10
04		4.9	26	230					3.10
05		4.55	26	250					3.10
06		4.4	25	260					3.10
07		5.7	26	280		<140	1.60	2.5	3.00
08		8.6	27	245		113	2.60	4.6	3.10
09		10.4	27	230		109	3.15	5.2	3.00
10	---	11.0	29	220		107	(3.40)	6.0	2.75
11	---	10.85	30	210	---	---	(3.60)	7.0	2.65
12	---	10.45	30	205		107	(3.72)	7.0	2.52
13	---	10.2	29	200		---	(3.70)	7.4	2.50
14	---	10.1	27	205	---	---	(3.70)	7.0	2.50
15	---	10.1	26	210	---	---	(3.50)	6.0	2.48
16		9.9	29	220		---	(3.18)	6.0	2.50
17		10.0	29	245		111	(2.65)	5.0	2.60
18		9.3	28	270		(151)	1.80	4.6	2.60
19		9.0	29	290				3.0	2.55
20		8.4	25	280				2.4	2.60
21		(8.5)	25	260				3.0	2.70
22		8.4	25	230				3.3	2.90
23		8.2	23	220				3.0	3.05

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 39

Concepcion, Chile (36.6° S, 73.0° W) June 1960

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.45	24	330				2.3	2.60
01		4.4	24	310					2.65
02		4.3	25	295				2.3	2.80
03		4.1	23	280					2.72
04		4.05	24	275				2.0	2.90
05		3.5	22	280		---	----		2.68
06		3.5	23	290		---	----		2.85
07		6.0	24	250		<169	1.80		3.20
08		9.0	25	230		119	2.40		3.45
09		9.85	26	230		114	2.90	3.2	3.45
10	---	10.1	26	230		111	3.15		3.50
11	(240)	10.0	27	220		109	3.30	3.4	3.45
12	(240)	9.3	27	220		111	3.35		3.35
13	(270)	10.15	28	220		111	3.30	3.6	3.35
14	(250)	10.3	28	230		111	3.02		3.32
15		9.6	28	235		119	2.80	3.0	3.40
16		9.0	27	230		123	2.30	2.6	3.38
17		8.2	27	220				2.2	3.40
18		6.8	28	220				2.4	3.22
19		6.5	28	230					3.10
20		6.4	27	230				2.0	3.10
21		5.8	25	240					2.90
22		5.1	24	280					2.80
23		4.6	24	330					2.60

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 40

Kiruna, Sweden (67.8° N, 20.3° E) December 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.6)	7	375				5.0	(2.6)
01		(5.1)	7	385				4.8	(2.55)
02		(4.1)	8	350				4.5	(2.6)
03		4.1	12	315				3.0	2.6
04		(3.8)	8	320				2.8	(2.6)
05		4.0	16	280					2.6
06		3.5	17	275					2.75
07		3.3	19	(270)					2.8
08		3.5	23	265					2.8
09		5.0	25	250					2.8
10		6.5	29	250		---	---		3.0
11		8.3	29	240		---	---		3.0
12		8.8	26	230		---	---		3.2
13		8.4	24	235		---	(1.4)		3.2
14		7.3	23	230		---	---		3.0
15		6.4	14	230					3.0
16		4.3	17	240				2.4	3.0
17		4.0	16	250				3.0	3.0
18		3.0	10	300				2.9	2.8
19		(3.4)	9	310				4.0	(2.9)
20		(4.1)	7	320				3.8	----
21		(4.2)	6	340				4.1	(2.65)
22		(3.7)	3	340				4.4	----
23		(3.4)	1	350				5.4	----

Time: 15.0°E.
Sweep: 0.8 Mc to 17.0 Mc in 30 seconds.

Table 41

Upsala, Sweden (59.8° N, 17.6° E) December 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(2.1)	19	335		110	0.85	3.3	(2.4)
01		(2.1)	19	325		105	0.85	3.0	(2.5)
02		(2.1)	21	310		110	0.70	2.6	2.5
03		(2.3)	24	300		105	0.70	3.0	(2.5)
04		(2.5)	24	290		110	0.85	3.0	(2.6)
05		(3.5)	29	260		110	0.85	2.9	(2.7)
06		(3.1)	29	255		110	0.85	3.0	(2.8)
07		2.6	30	255		(115)	0.90	2.3	2.8
08		4.4	31	245		110	1.25	2.9	2.8
09		6.9	31	240		105	1.80	4.1	3.1
10		8.8	31	235		105	2.00	4.7	3.1
11		10.2	31	230		(110)	2.20	4.7	3.2
12		11.3	31	230		110	2.20	4.7	3.2
13		11.2	31	225		105	2.10	4.7	3.2
14		10.5	31	225		105	1.80	3.5	3.2
15		9.2	31	215		105	1.50	2.9	3.2
16		8.3	29	215		105	1.00	2.7	3.0
17		6.4	25	220		105	0.90	2.5	3.1
18		4.6	25	240		105	0.90	2.5	2.9
19		3.5	23	255		105	(0.70)	1.2	2.9
20		2.8	25	275		105	0.90	1.0	2.7
21		2.6	22	290		105	0.85	2.2	2.7
22		2.3	15	300		105	0.80	2.0	2.6
23		2.2	14	315		110	0.70		2.6

Time: 15.0°E.
Sweep: 0.3 Mc to 20.0 Mc in 3 minutes.

Table 42

Falkland Is. (51.7° S, 57.8° W) December 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.4	30	315				2.8	2.35
01		9.2	29	300				2.8	2.4
02		9.0	31	300			----	2.7	2.45
03		8.8	30	320			E	2.1	2.3
04		9.2	30	290	---	115	1.60	2.6	2.3
05	415	10.0	31	255	---	115	2.40	3.0	2.3
06	385	10.4	30	250	4.7	110	(2.90)	3.7	2.3
07	380	10.4	30	250	5.0	105	3.25	4.8	2.4
08	410	10.3	31	245	5.2	105	3.50	5.2	2.4
09	400	10.3	29	230	5.3	100	3.70	4.8	2.35
10	380	10.4	30	235	5.5	100	3.80	5.0	2.5
11	390	10.8	31	245	5.6	100	>3.80	5.0	2.5
12	380	10.1	30	225	5.5	100	3.90	4.4	2.55
13	370	9.6	31	235	5.5	100	3.85	4.6	2.65
14	350	9.4	30	235	5.5	100	3.75	4.8	2.65
15	350	8.8	30	240	5.1	105	3.60	4.9	2.7
16	350	8.7	31	250	5.3	105	3.50	5.1	2.7
17	325	8.4	30	250		105	3.10	4.7	2.85
18		8.2	30	250		115	2.70	5.4	2.8
19		8.1	30	265		125	2.05	5.1	2.7
20		8.2	30	295			----	3.0	2.45
21		8.6	31	320				>2.8	2.3
22		9.2	30	335				2.8	2.3
23		9.3	31	320				2.9	2.3

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 43

Byrd Station (80.0° S, 120.0° W) December 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00	450	(5.2)	13	<280	3.8	(107)	(2.55)	2.8	2.50
01	430	(5.45)	10	<300	---	111	----		(2.45)
02	(450)	(5.05)	12	(275)	(4.0)	106	----	3.7	(2.55)
03	(525)	(4.8)	12	270	(4.0)	104	----	3.6	2.50
04	(440)	5.3	15	(265)	(4.4)	105	----		2.60
05	(485)	5.25	14	250	---	105	----		2.78
06	<410	5.4	14	245	(4.3)	(105)	----		2.70
07	420	5.5	19	(240)	4.4	104	(2.98)		2.70
08	<440	5.5	24	240	4.4	105	(2.98)		2.70
09	470	5.9	24	240	4.5	105	(3.05)		2.60
10	445	6.3	29	(235)	4.6	107	(3.08)		2.60
11	440	6.45	26	(240)	4.6	105	----		2.70
12	410	6.6	27	235	4.7	105	(3.15)		2.65
13	410	6.85	26	(240)	4.7	105	(3.20)		2.60
14	425	6.75	26	(255)	4.7	107	(3.10)		2.60
15	410	7.05	26	(255)	(4.6)	107	----		2.55
16	400	(7.05)	20	(255)	4.6	103	(2.95)		2.55
17	400	(6.55)	18	<260	4.7	105	(2.85)		2.50
18	450	(6.1)	15	275	(4.4)	<109	(3.00)		(2.48)
19	(430)	(5.2)	11	275	(4.1)	106	(3.00)		(2.50)
20	450	(5.3)	16	(265)	(4.2)	107	(2.80)		(2.48)
21	<475	(5.65)	16	(270)	(4.2)	108	(2.60)	3.2	(2.58)
22	(510)	(5.35)	10	260	---	(109)	----	3.6	(2.50)
23	445	(5.1)	12	(280)	(3.8)	107	(2.50)		(2.50)

Time: Local.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 44

Winnipeg, Canada (49.9° N, 97.4° W) November 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.0	22	<290					----
01		3.7	23	290					(3.00)
02		3.4	20	290					----
03		3.0	19	290					----
04		3.0	19	300					----
05		2.9	19	300					----
06		2.7	15	(300)					----
07		3.1	16	280					----
08		6.0	18	250		---	----		(3.25)
09		7.4	20	250		---	----		3.30
10		8.4	22	245		---	----		3.15
11		9.3	21	240		---	----		3.10
12		9.8	23	250		---	----		----
13		9.6	16	250		---	----		(2.95)
14		9.8	15	250		---	----		----
15		9.6	16	240		---	----		(2.90)
16		10.0	21	240		---	----		(2.95)
17		9.8	27	225					(3.00)
18		8.5	27	230					----
19		7.4	29	235					(3.10)
20		6.2	27	240					(3.25)
21		5.2	25	245					(3.10)
22		4.5	20	250					----
23		4.2	23	275					----

Time: 90.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 45

Kiruna, Sweden (67.8° N, 20.3° E) October 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.0)	5	330				4.0	(2.6)
01		(4.0)	5	350				4.6	---
02		(4.4)	8	320				4.0	(2.6)
03		(4.3)	7	300				3.0	(2.6)
04		(4.3)	8	295					(2.8)
05		3.6	13	280					2.8
06		4.8	16	260					2.8
07	---	5.6	27	255	---	---	1.9		2.95
08	---	6.5	29	250	---	---	2.0		3.0
09	---	7.8	29	245	---	---	2.3		3.0
10	---	8.8	28	240	---	115	2.4		3.0
11	---	9.6	28	245	---	---	2.6		2.9
12	---	10.3	29	245	---	115	2.6		3.0
13	---	10.0	29	245	---	115	2.6		3.0
14	---	8.8	25	245		130	2.3		3.0
15		9.0	21	240		---	2.1		3.0
16		8.0	20	245		---	1.7	3.0	3.0
17		7.2	18	250				2.9	2.95
18		6.6	13	265				2.8	2.9
19		5.3	12	265				3.0	2.8
20		(4.5)	9	285				3.0	(2.75)
21		(5.0)	9	330				3.7	(2.6)
22		(5.3)	9	330				3.6	(2.6)
23		(5.3)	5	330				4.2	(2.6)

Time: 15.0°E.
Sweep: 0.8 Mc to 17.0 Mc in 30 seconds.

Table 46

Wakkanai, Japan (45.4° N, 141.7° E) October 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.3	29	300					2.65
01		5.2	28	295				2.5	2.65
02		5.0	27	290				2.4	2.65
03		5.1	27	290				2.5	2.65
04		4.9	27	275				2.5	2.65
05		5.0	29	275					2.75
06		7.0	30	245			1.90		3.05
07		9.6	30	230			2.45		3.20
08	---	11.1	29	230	---		2.90		3.15
09	---	12.0	29	230	---		3.10	3.6	3.05
10	---	12.5	29	230	---		3.25	4.0	3.05
11	---	12.5	29	230	---		3.30	4.2	3.05
12	---	12.0	29	225	---		3.30	4.0	2.90
13		11.6	29	230			3.25	4.1	2.90
14		11.6	28	245			3.10	3.8	2.95
15		11.6	29	245			2.70	3.5	3.00
16		11.0	30	240			2.25	3.4	3.05
17		9.8	29	230				3.0	3.05
18		8.0	28	230				2.8	2.95
19		7.0	28	250				2.6	2.90
20		6.5	29	260					2.85
21		6.0	30	270				2.8	2.75
22		5.8	30	280					2.70
23		5.5	29	290					2.70

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 47

Akita, Japan (39.7° N, 140.1° E) October 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.6	30	290					2.70
01		5.4	30	295					2.70
02		5.2	30	300					2.70
03		5.2	30	290					2.70
04		5.0	30	280					2.70
05		5.0	30	300					2.70
06		7.4	30	245			----		3.20
07		10.4	30	230			2.55		3.20
08	---	11.5	31	230	---		3.00	3.6	3.25
09	245	12.1	31	230	---		3.30	4.0	3.15
10	245	12.6	31	225	---		3.45	3.9	3.10
11	245	12.6	31	220	---		3.50	4.1	3.00
12	245	12.3	31	225	---		3.50	4.2	2.95
13	(250)	12.2	31	230			3.50	4.0	2.95
14	(250)	12.3	31	245			3.30	4.3	2.95
15		12.0	31	245			3.00	4.2	3.00
16		11.6	31	240			2.45		3.05
17		10.8	31	235				3.1	3.05
18		8.4	31	230					3.10
19		7.1	31	240					3.00
20		6.8	31	250					2.90
21		6.4	30	260					2.85
22		6.0	30	265					2.75
23		5.8	30	280					2.70

Time: 135.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 48

Tokyo, Japan (35.7° N, 139.5° E) October 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	31	290				2.3	2.75
01		5.4	31	300					2.75
02		5.3	30	300					2.70
03		5.2	30	285					2.75
04		4.8	30	270					2.65
05		4.7	30	300					2.70
06		7.3	30	250			----		3.05
07		10.4	30	240			2.65		3.20
08	---	11.5	30	240			3.15	3.3	3.20
09	---	12.2	30	240			3.40	3.7	3.10
10	---	12.7	29	<250			(3.55)	3.9	3.00
11	---	12.8	30	<250			(3.65)	4.0	2.90
12	---	12.9	31	<250			(3.70)	3.7	2.85
13	---	13.2	31	250			(3.60)		2.85
14	---	12.9	31	250			3.40	3.5	2.90
15	---	12.8	31	250			3.10	3.2	2.95
16	---	12.0	31	250			2.65	3.0	3.00
17	---	11.2	31	245			----	2.5	3.05
18		9.4	31	235				3.3	3.10
19		7.7	31	250				2.7	2.95
20		7.0	31	255				2.7	2.85
21		6.6	31	265				2.5	2.80
22		6.1	31	280				2.5	2.75
23		5.8	31	280				2.2	2.75

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 49

Yamagawa, Japan (31.2° N, 130.6° E) October 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	31	280				2.1	2.70
01		6.6	30	275					2.70
02		6.1	29	255					2.70
03		5.6	28	260					2.80
04		5.3	28	245					2.80
05		4.4	28	270					2.65
06		4.9	28	290					2.75
07		9.1	26	250			2.20	2.4	3.15
08		11.6	28	240			2.90	3.2	3.15
09		12.3	29	240			3.30	3.9	3.05
10		12.6	26	240			3.50	4.0	3.00
11	(300)	12.8	27	225			3.70	3.9	2.90
12	300	13.6	25	220			3.75		2.80
13	300	14.2	20	235			3.70		2.80
14	300	14.2	20	240			3.60		2.80
15	300	14.1	19	250			3.40	3.6	2.80
16	---	13.8	20	250			3.00	3.1	2.85
17		13.3	29	250			2.30	2.9	2.95
18		(12.5)	29	245				2.8	(2.95)
19		10.8	24	235				2.5	2.85
20		(9.4)	21	250				2.2	(2.80)
21		(8.8)	22	250				2.1	(2.70)
22		(8.4)	26	255				2.8	(2.75)
23		7.6	28	270				2.8	2.70

Time: 135.0°E.
Sweep: 1.0 Mc to 20.3 Mc in 30 seconds.

Table 50

Bunia, Belgian Congo (1.5° N, 30.2° E) October 1959

Time	h'F2	foF2-Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	(10.2)	5					1.7	(2.72)
01	250	10.0	10					1.8	2.80
02	230	9.2	11					2.0	2.87
03	220	6.8	17					2.0	3.09
04	250	7.7	17			130	---	3.0	2.98
05	250	10.0	25	245		120	2.9	3.8	2.95
06	---	11.0	26	235		115	3.4	4.2	2.68
07	---	11.8	27	230		110	3.6	3.8	2.46
08	---	12.6	25	250		110	4.0		2.32
09	---	>13.3	23	240		110	4.0		2.22
10	---	13.5	23	250		110	4.0		2.14
11	---	13.9	23	250		110	4.0		2.15
12	---	>14.3	26	240		110	3.8		<2.18
13	---	14.5	25	240		115	3.5		2.22
14	---	14.3	22	250		120	3.0	3.4	<2.21
15	(485)	14.0	17	265		125	2.4	3.0	2.18
16	(300)	13.8	12	320				3.0	<2.11
17	400	(14.2)	7					2.0	(2.07)
18	330	----	0						
19	265	(13.1)	1					2.0	----
20	230	>14.5	2						----
21	210	(13.0)	3						----
22	220	(10.3)	5						(2.57)
23	250	(10.0)	6					1.9	(2.56)

Time: 0.0°
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 51

Leopoldville, Belgian Congo (4.4° S, 15.2° E) October 1959

Time	h'F2	foF2-Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	12.1	11						2.63
01	250	11.0	14						2.67
02	240	8.0	10						2.80
03	225	7.0	23						2.92
04	220	4.9	24					1.6	3.02
05	240	6.8	26	---		130	1.9	2.5	2.94
06	240	8.7	18	235		120	2.9	3.5	2.94
07	---	9.7	26	230		110	3.4	3.8	<2.67
08	---	11.1	27	230		110	3.7	4.0	2.38
09	---	12.3	27	230		110	4.0		2.32
10	---	13.1	21	240		110	---		2.27
11	---	13.5	24	(250)		110	---		2.24
12	435	14.1	25	240		110	---		2.23
13	390	15.1	27	250	---	110	3.9		2.28
14	365	15.6	27	250		110	3.5		2.33
15	(350)	15.0	25	250		115	3.0	3.6	2.36
16	---	14.7	16	255		120	2.4	3.0	<2.34
17	295	>15.0	8	---				2.8	(2.35)
18	335	----	0					2.0	
19	280	----	0						
20	250	>15.0	1						----
21	220	>15.4	6						(2.64)
22	215	15.0	14						2.70
23	220	12.6	16						2.68

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 52

Elisabethville, Belgian Congo (11.6° S, 27.5° E) October 1959

Time	h'F2	foF2-Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	6.9	18						2.62
01	270	6.9	21						2.66
02	250	6.5	24					1.2	2.86
03	250	5.1	25						2.84
04	250	6.8	24			---	1.8	2.5	2.97
05	250	9.0	25	245		120	2.7		2.95
06	255	10.4	26	235		115	3.3		2.81
07	280	11.0	27	230		110	3.6		2.62
08	(270)	11.6	24	230		110	3.9		2.54
09	295	12.3	25	235	---	110	4.0		2.51
10	(340)	12.5	28	250	---	110	4.0		2.44
11	350	13.0	27	255	---	110	4.0		2.35
12	360	13.5	28	250	---	110	3.9		2.34
13	350	13.5	28	250	---	110	3.6		2.41
14	330	13.4	25	250		115	3.2	3.2	2.47
15	(300)	13.3	25	255		120	2.5	3.4	2.52
16	270	13.0	20					3.0	2.56
17	280	(12.9)	6					2.6	2.55
18	270	12.7	10					2.1	2.64
19	250	13.0	14						2.68
20	240	12.6	21						2.71
21	240	11.0	24						2.70
22	245	10.6	22						2.82
23	240	8.8	14						2.76

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 53

De Bilt, Holland (52.1° N, 5.2° E) September 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	30	320					2.70
01		4.6	30	340					2.65
02		4.6	30	340					2.65
03		4.0	30	330					2.70
04		4.0	30	300					2.80
05	---	4.1	29	285	---	---	1.8		2.95
06	(350)	5.1	30	250	4.2	140	2.3		3.15
07	(410)	6.0	30	235	4.4	110	2.8	3.3	3.15
08	350	6.4	30	225	4.4	110	3.1		2.95
09	400	7.0	29	225	5.0	105	3.4		2.95
10	410	7.8	30	220	5.2	105	3.6		2.95
11	360	8.1	30	225	5.4	110	3.8		2.90
12	340	8.4	30	225	5.3	105	3.8		2.95
13	330	8.5	30	225	5.3	105	3.6		2.95
14	(340)	8.3	30	225	5.6	105	3.5		2.90
15	(320)	8.4	30	235	---	110	3.2		3.00
16	---	8.6	30	240	---	110	2.9		3.00
17	---	8.5	30	250		145	2.3		3.05
18		8.6	30	240		---	2.0		3.10
19		8.2	29	245		---	---		3.05
20		6.9	30	245					3.00
21		6.0	30	260					2.85
22		5.3	30	280					2.75
23		5.2	30	320					2.70

Time: 0.0°.
Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 54

Kiruna, Sweden (67.8° N, 20.3° E) July 1959

Time	h'F2	foF2-Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	(5.6)	7	(340)	---			3.4	(2.6)
01	---	(6.8)	5	(300)	---	---	---	3.4	(2.6)
02	---	(5.5)	9	(300)	---	---	---	3.6	(2.6)
03	(450)	(5.4)	9	(255)	3.5	---	---	2.3	(2.6)
04	(380)	5.8	11	(250)	3.7	---	---		2.6
05	(400)	6.0	11	(245)	4.2	---	---		2.6
06	(460)	6.0	12	(240)	4.4	105	2.9		2.6
07	(405)	6.3	10	(235)	4.7	---	---		2.6
08	440	6.4	15	(240)	4.8	105	3.2		2.6
09	425	6.6	14	215	5.0	105	3.1		2.6
10	420	6.6	13	230	5.0	100	3.3		2.6
11	440	6.4	14	210	5.2	100	3.4		2.6
12	435	6.4	15	220	5.2	100	3.4		2.6
13	420	6.4	13	(210)	5.1	100	3.4		2.6
14	430	6.4	15	230	5.1	105	3.4		2.6
15	435	6.4	16	225	5.0	105	3.2		2.6
16	(440)	6.2	16	(220)	4.8	105	3.0		2.6
17	(390)	6.1	16	240	4.6	105	3.0		2.6
18	---	6.4	16	250	---	110	2.7		2.8
19	---	6.4	16	270	---	---	2.4	3.4	2.8
20	---	6.4	13	310	---	---	---	3.2	2.7
21		6.2	12	295		---	---	3.4	2.6
22		5.8	13	335				4.0	2.6
23		5.4	10	(340)				3.7	(2.6)

Time: 15.0°E.
Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 55

Concepcion, Chile (36.6 S, 73.0° W) June 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.2	30	310					2.60
01		4.9	30	310					2.62
02		4.8	30	295					2.70
03		4.7	30	295					2.70
04		4.75	30	270					2.90
05		4.0	30	255		---	----		2.70
06		3.95	30	290		---	----		2.78
07		6.65	30	250		<161	1.90		3.10
08		9.9	30	220		111	2 60		3.42
09		11.35	30	225		109	3.00	3.0	3.40
10	---	11.1	30	220		109	3.30	3.4	3.35
11	---	11.5	29	220		109	3.50		3.30
12	---	11.65	30	220		109	3.50		3.10
13	(250)	12.25	30	220		109	3.45		3.10
14		11.8	30	230		109	3.20		3.10
15		11.5	30	230		109	2.90		3.20
16		11.15	30	230		119	2.35		3.22
17		9.6	30	220				1.8	3.30
18		8.25	30	220				2.0	3.10
19		8.6	30	230					3.12
20		7.7	30	220					3.10
21		6.4	30	230					2.98
22		5.7	30	260					2.72
23		5.5	30	290					2.68

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 56

Churchill, Canada (58.8° N, 94.2° W) May 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.7	24	280		---	---	5.2	
01		5.4	23	270		---	---	4.6	
02		5.0	23	270		---	---	5.0	
03		4.8	22	290		---	1.6	4.2	
04		5.0	22	300		---	2.0	4.6	
05	(570)	5.1	21	280	3.4	130	2.4	4.0	----
06	490	5.2	20	260	4.0	110	3.0	4.3	
07	470	5.8	19	240	4.6	105	3.2	4.3	G
08	490	6.0	19	240	4.9	105	3.5	4.4	----
09	540	6.0	20	240	5.0	105	3 5	4.3	(2.5)
10	560	6.0	22	230	5.0	105	3.6	4.4	2.3
11	500	6.3	23	220	5.1	105	3.8	4.0	2.5
12	500	6.3	23	230	5.1	105	3.8		2.4
13	500	7.0	23	220	5.2	105	3.8	4.5	(2.5)
14	460	7.2	23	230	5.1	105	3.7	4.5	2.55
15	450	7.1	23	230	5.0	105	3.5		2.5
16	440	7.0	23	230	5.0	110	3.3	4.0	2.6
17	400	6.8	23	240	4.8	110	3.2	4.0	(2.55)
18	(480)	6.8	23	250	4.2	110	3.0	4.0	----
19	---	6.2	23	280	---	115	3.0	3.4	----
20	---	6.0	23	300	---	120	2.6	3.5	----
21		6.0	23	320		120	2.3	4.3	----
22		5.2	23	320		150	2.2	9.0	----
23		5.7	23	300		---	---	7.0	

Time: 90.0°W.
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 57

Inverness, Scotland (57.4° N, 4.2° W) May 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	31	320				1.2	2.35
01		6.2	31	310				1.1	2.35
02		5.8	31	330			----	1.2	2.35
03		5.3	29	350		(120)	1.25	<1.8	2.4
04		5.8	29	335		110	1.75		2.5
05	(625)	6.0	29	265	---	110	2.30		2.6
06	615	6.2	28	250	4.2	110	2.70		2.7
07	(550)	6.7	29	250	---	110	3.00		2.6
08	500	>7.2	27	240	4.9	110	3.20		2.65
09	600	7.6	28	235	5.0	110	3.50	3.7	2.65
10	470	7.8	30	230	5.2	105	3.65	3.8	2.6
11	530	7.8	29	235	5.4	105	3.75		2.65
12	460	7.9	31	230	5.5	105	3.80		2.6
13	465	7.6	31	230	5.6	105	3.85		2.5
14	470	7.9	30	230	(5.5)	105	3.75		2.55
15	450	7.9	31	240	5.5	105	3.70		2.6
16	395	8.2	30	240	(5.1)	110	3.40		2.6
17	(455)	8.3	29	250	---	110	3.10		2.7
18		8.2	29	250		110	2.85		2.75
19		8.3	31	260		115	2.40		2.75
20		8.2	31	265		150	1.95		2.7
21		7.9	30	270		150	----	<1.6	2.65
22		7.3	31	295				<1.6	2.5
23		7.1	31	305				<1.6	2.4

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 58

Kiruna, Sweden (67.8° N, 20.3° E) April 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.9	17	395				3.0	2.4
01		6.0	16	390				3.8	2.4
02		5.4	13	340		---	---	3.1	2.4
03		5.3	17	315		---	---	2.7	2.55
04	---	5.4	20	310	---	---	1.6	1.6	2.4
05	---	6.0	25	270	---	120	2.0		2.6
06	---	6.2	24	260	---	110	2.4		2.6
07	(585)	7.0	27	250	4.3	110	2.8		2.6
08	(500)	7.5	26	245	4.7	110	2.9		2.6
09	510	8.0	26	240	5.0	110	3.0		2.6
10	500	8.2	27	240	5.0	110	3.1		2.6
11	(505)	8.6	28	240	5.1	110	3.2		2.55
12	485	8.4	28	240	5.2	110	3.4		2.6
13	(460)	8.2	29	240	5.2	110	3.3		2.6
14	(425)	8.4	28	245	5.0	110	3.2		2.6
15	(425)	8.0	28	245	4.8	110	3.0		2.6
16	---	8.0	28	250	---	110	2.9		2.7
17	---	8.0	27	255		115	2.6		2.7
18		7.4	24	270		115	2.2		2.8
19		6.6	24	275		---	1.9	2.2	2.7
20		6.9	22	300		---	---	2.6	2.6
21		6.2	21	340		---	---	2.9	2.6
22		5.9	18	355		---	---	3.8	2.45
23		6.0	17	355				3.7	2.4

Time: 15.0°E.
Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 59

Schwarzenburg, Switzerland (46.8 N, 7.3° E) January 1959

Time	h'F2	foF2	Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.6	31						3.0
01	290	4.4	31						3.0
02	300	4.3	30						2.9
03	310	4.3	31						2.9
04	300	4.0	30						2.95
05	280	3.9	29						3.05
06	250	3.7	28						3.2
07	250	3.7	29						3.2
08	210	6.7	28			---	---		3.4
09	200	10.8	21			110	2.3		(3.5)
10	210	13.0	29			100	2.8		3.4
11	210	13.4	26			100	3.1		3.4
12	210	13.3	27			100	3.2		3.4
13	210	13.4	25			100	3.3		3.3
14	210	12.6	29			100	3.2		3.2
15	220	12.5	22			100	2.9		3.3
16	210	11.6	19			100	2.4		(3.3)
17	210	10.9	15			130	---		(3.3)
18	210	9.0	14						(3.4)
19	210	7.6	21						3.3
20	220	6.5	27						3.3
21	240	5.2	29						3.15
22	260	5.0	30						3.1
23	280	4.6	30						3.0

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds

Table 60

Lulea, Sweden (65.6° N, 22.1° E) April 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.9)	19	430				2.2	(2.2)
01		(6.0)	21	385				2.2	(2.2)
02		(6.2)	18	370				1.8	(2.1)
03		(6 2)	19	350		---	---		(2.3)
04		(5.8)	20	310		---	2.0		(2.4)
05	---	6.0	22	280	---	120	2.2		(2.55)
06	---	6.4	22	255	---	120	2.7		2.6
07	---	7.0	26	250	---	115	3.0		2.6
08	---	7.8	24	245	5.4	115	3.2		2.6
09	(500)	7.8	27	240	5.6	110	3.4		2.5
10	480	8.4	27	240	5.9	110	3.5		2.5
11	460	8.9	29	240	5.8	110	3.6		2.5
12	(475)	8.9	28	235	5.5	115	3 6		2.5
13	480	9.1	28	240	5.6	115	3.4		2.6
14	455	9.1	29	245	5.4	115	3.4		2.6
15	(425)	9.0	29	250	5.5	115	3.2		2.7
16	---	8.8	29	250		120	3.0		2.7
17	---	8.4	29	260		120	2.8		2.8
18		8.0	28	270		130	2.4		2.8
19		7.0	29	290		---	2.0		2.7
20		(6.8)	25	305		---	---	2.9	(2.5)
21		(6.0)	23	345		---	---	3.1	(2.4)
22		(6.0)	20	390				3.2	(2.3)
23		(6.2)	16	430				2.8	---

Time: 15.0°E
Sweep: 0.65 Mc to 25 0 Mc in 5 minutes, automatic operation.

US-COMM-NBS-BL

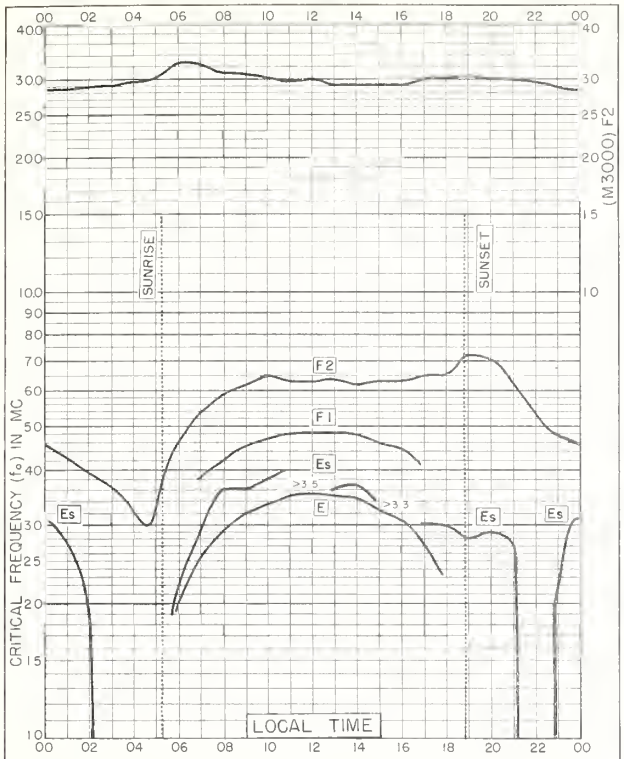


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W AUGUST 1961

NBS 503

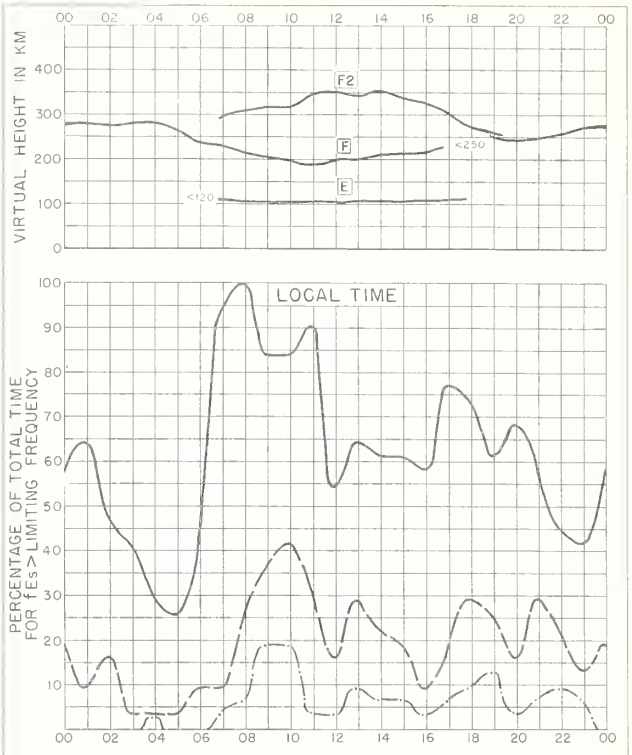


Fig. 2. WASHINGTON, D.C. AUGUST 1961

NBS 490

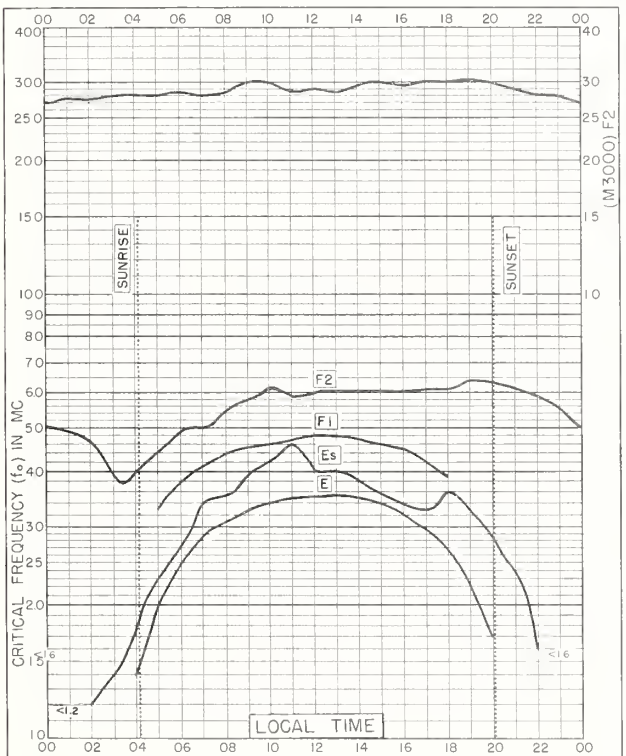


Fig. 3. SLOUGH, ENGLAND
51.5°N, 0.6°W JULY 1961

NBS 503

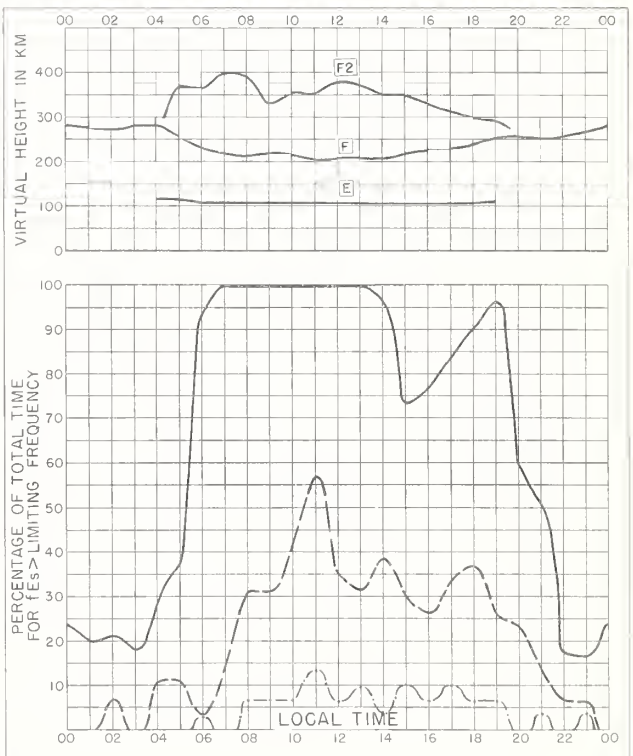


Fig. 4. SLOUGH, ENGLAND JULY 1961

NBS 490

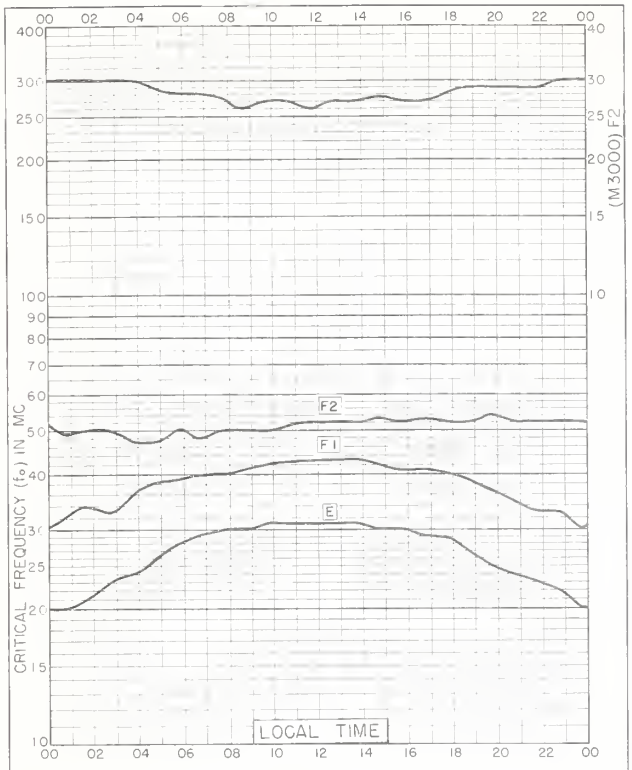


Fig. 5. RESOLUTE BAY, CANADA
74.7° N, 94.9° W JUNE 1961

NBS 503

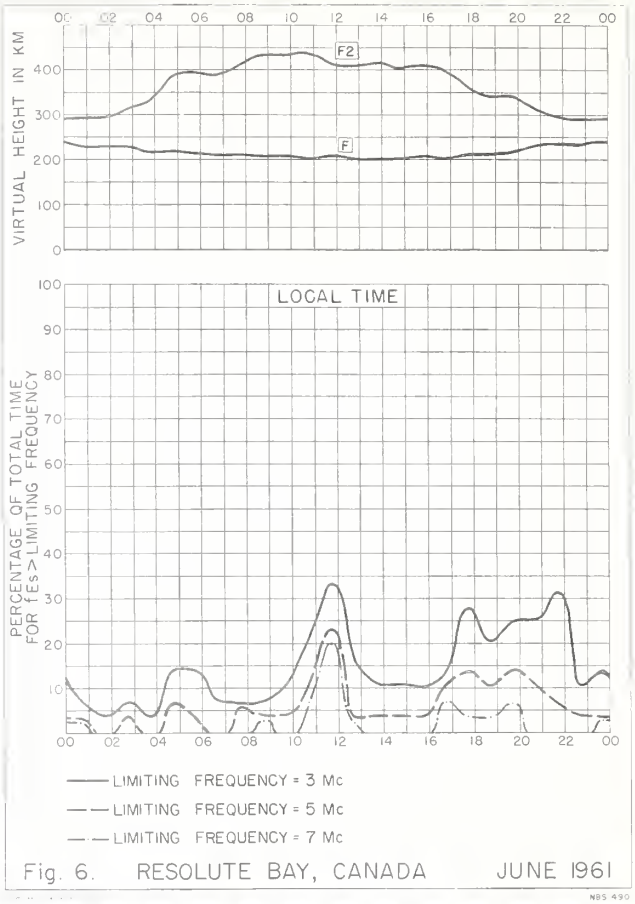


Fig. 6. RESOLUTE BAY, CANADA JUNE 1961

NBS 490

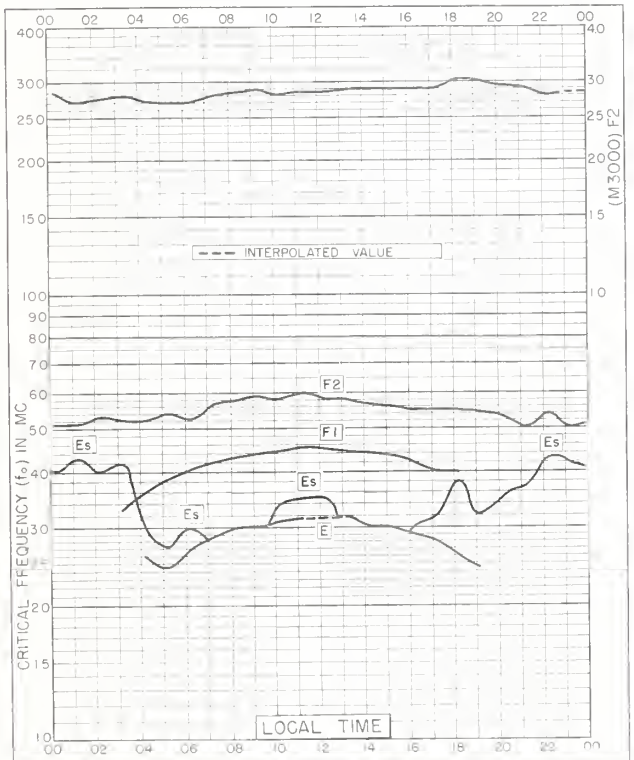


Fig. 7. TROMSO, NORWAY
69.7° N, 19.0° E JUNE 1961

NBS 503

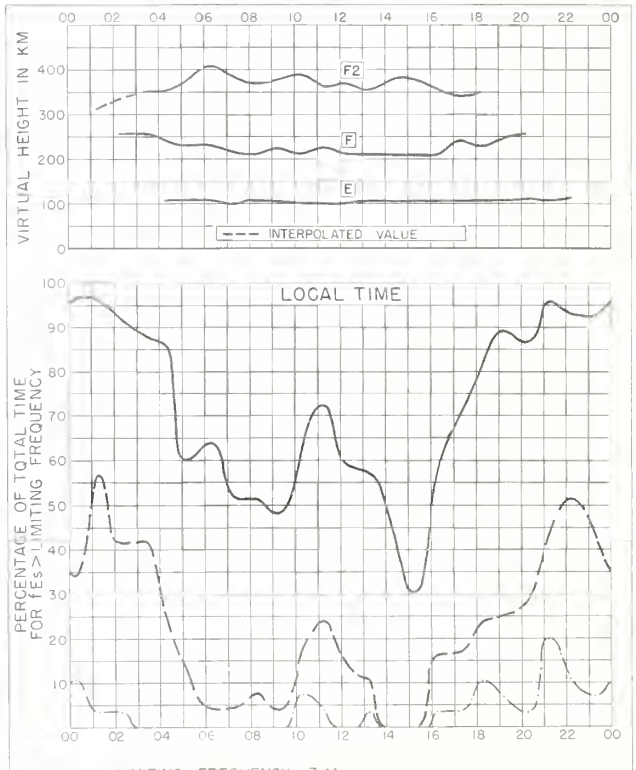


Fig. 8. TROMSO, NORWAY JUNE 1961

NBS 490

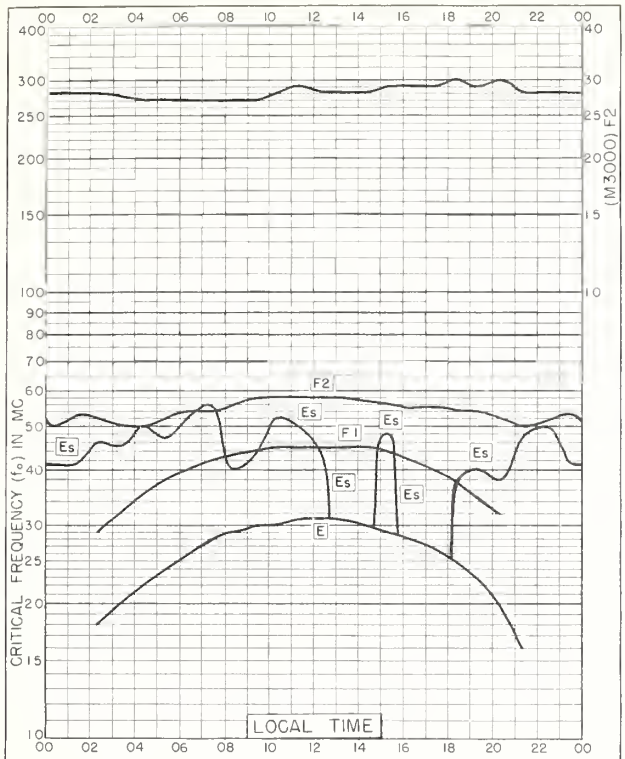


Fig. 9. KIRUNA, SWEDEN
67.8° N, 20.4° E JUNE 1961

NBS 503

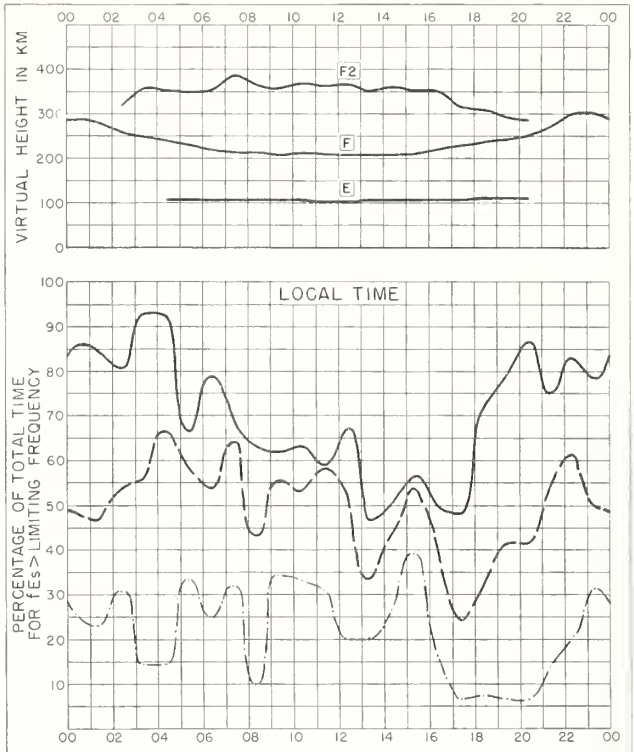


Fig. 10. KIRUNA, SWEDEN JUNE 1961

NBS 490

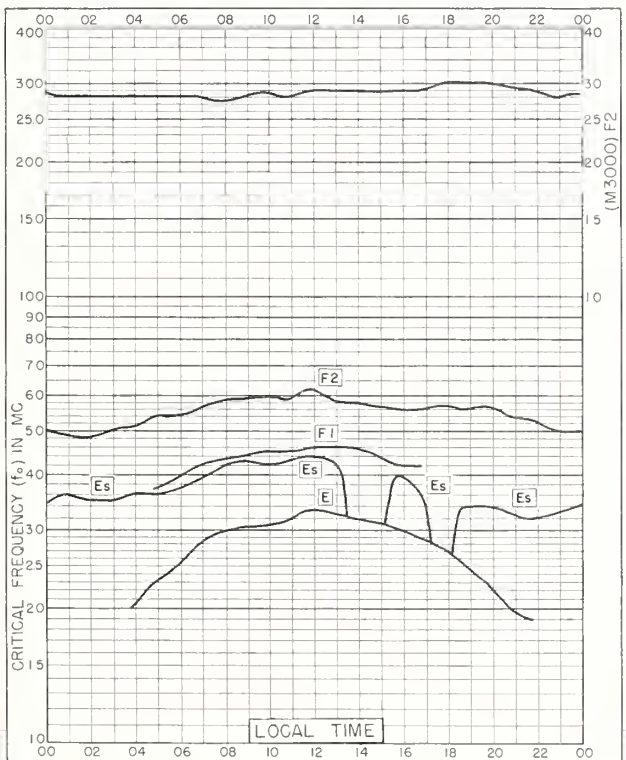


Fig. 11. SODANKYLA, FINLAND
67.4° N, 26.6° E JUNE 1961

NBS 503

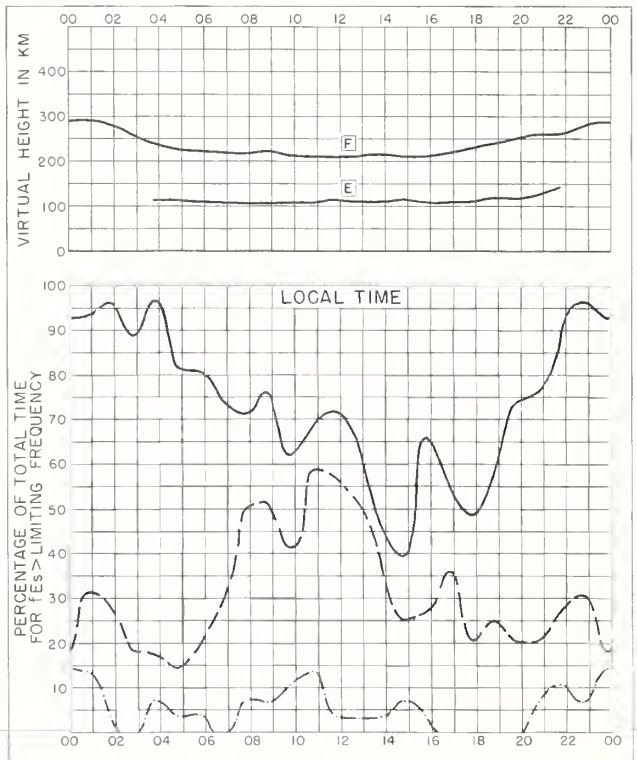


Fig. 12. SODANKYLA, FINLAND JUNE 1961

NBS 490

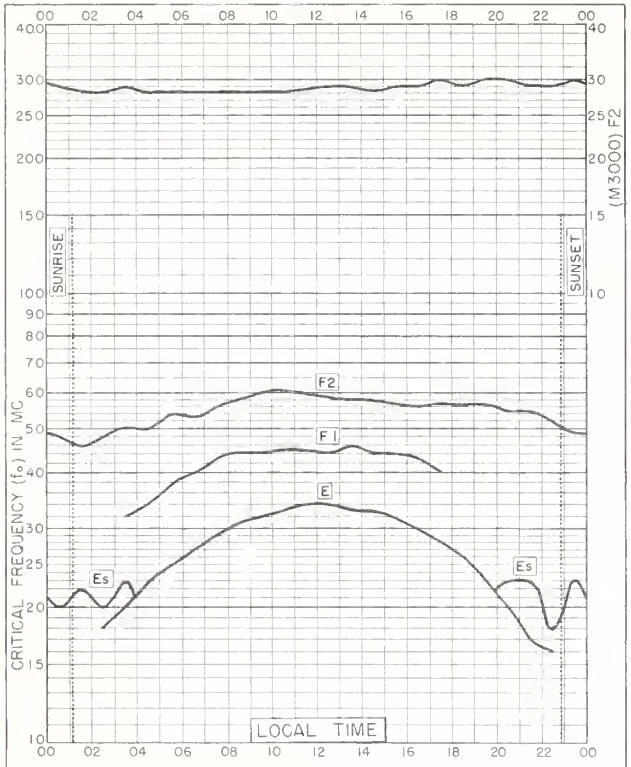


Fig. 13. LULEA, SWEDEN
65.6°N, 22.1°E
JUNE 1961

NBS 503

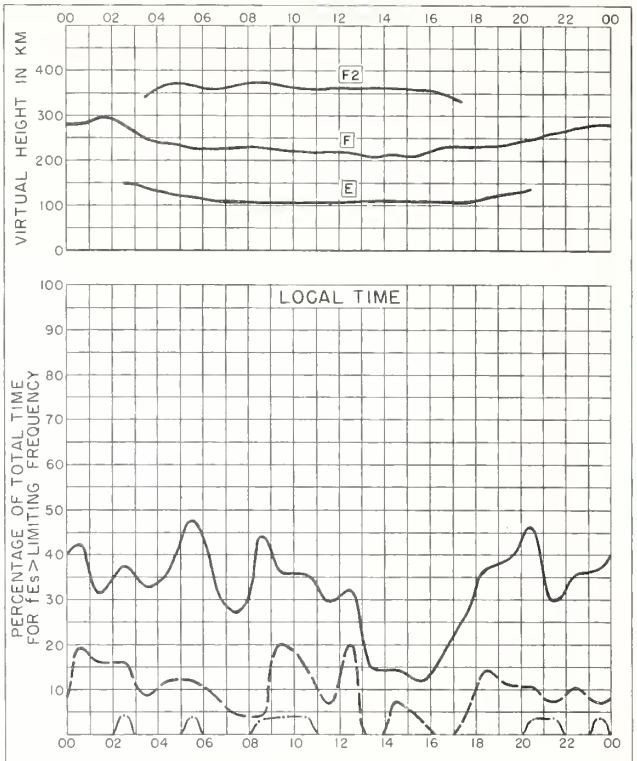


Fig. 14. LULEA, SWEDEN
JUNE 1961

NBS 490

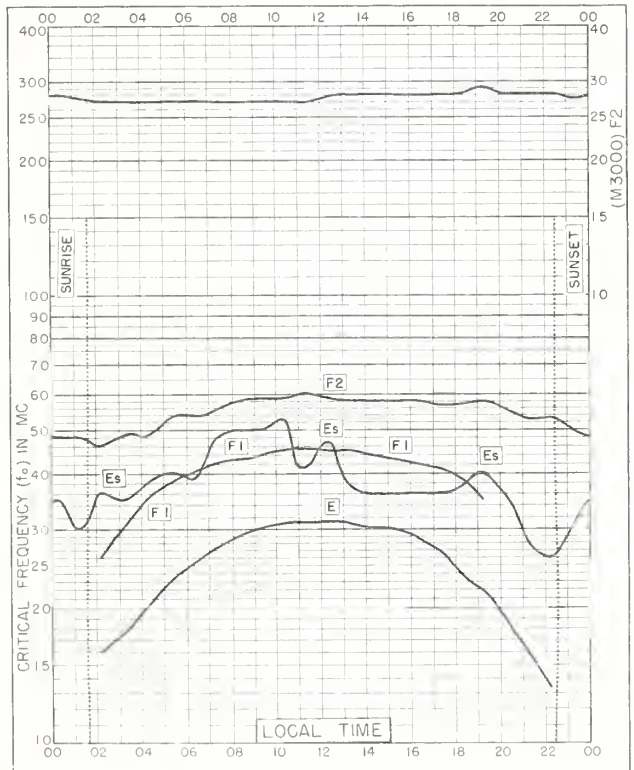


Fig 15. LYCKSELE, SWEDEN
64.6°N, 18.8°E
JUNE 1961

NBS 503

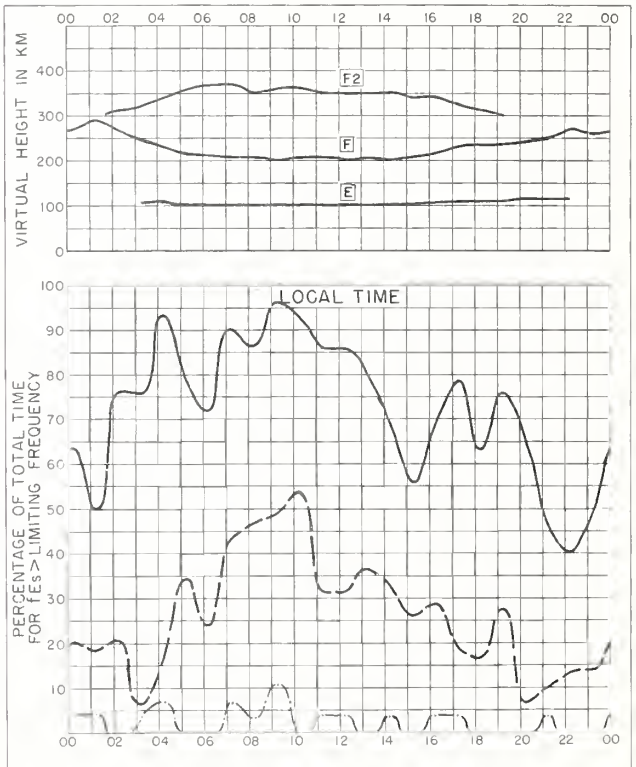


Fig. 16. LYCKSELE, SWEDEN
JUNE 1961

NBS 490

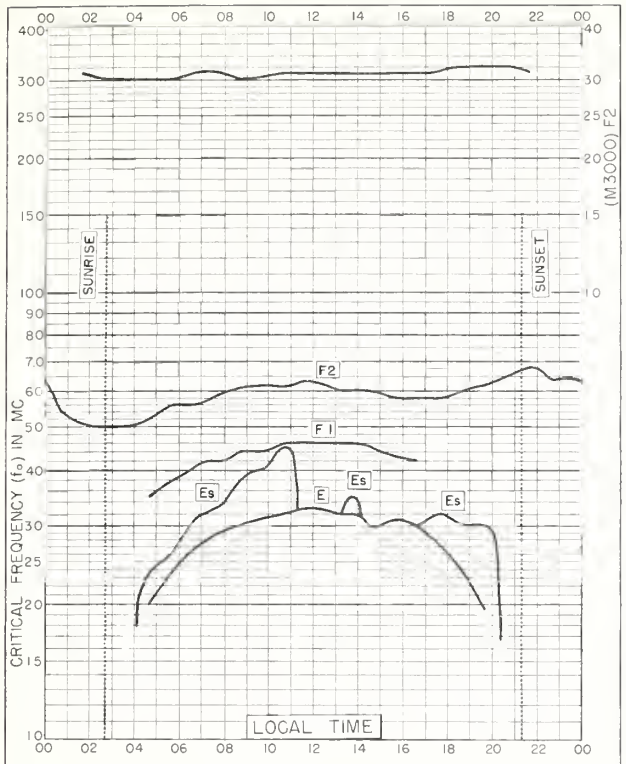


Fig. 17. NURMIJARVI, FINLAND
60.5° N, 24.6° E JUNE 1961

NBS 503

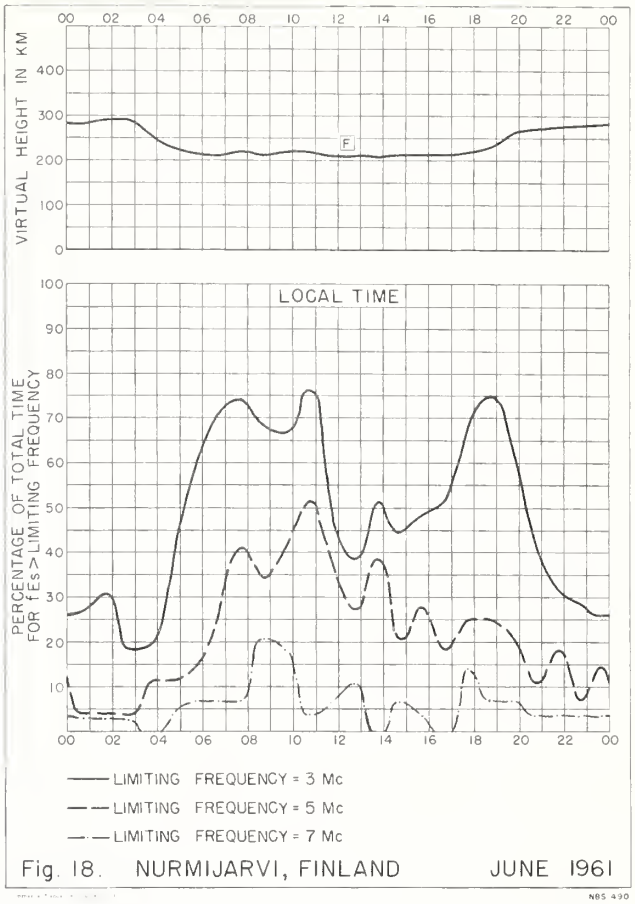


Fig. 18. NURMIJARVI, FINLAND JUNE 1961

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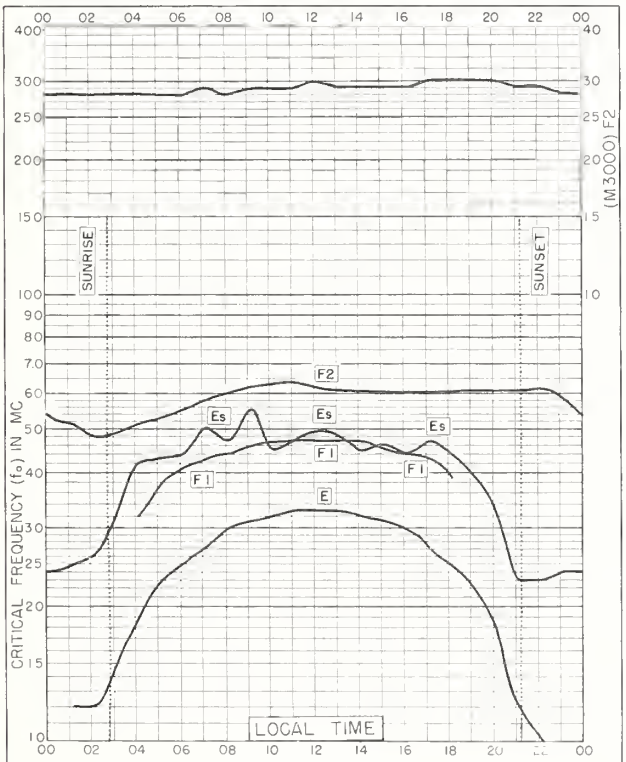


Fig. 19. UPSALA, SWEDEN
59.8° N, 17.6° E JUNE 1961

NBS 503

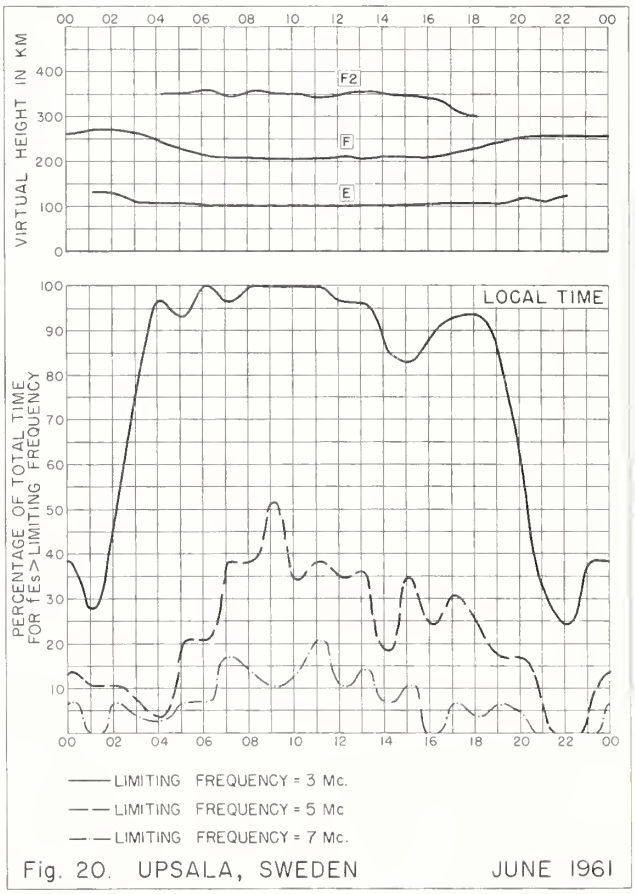


Fig. 20. UPSALA, SWEDEN JUNE 1961

NBS 490

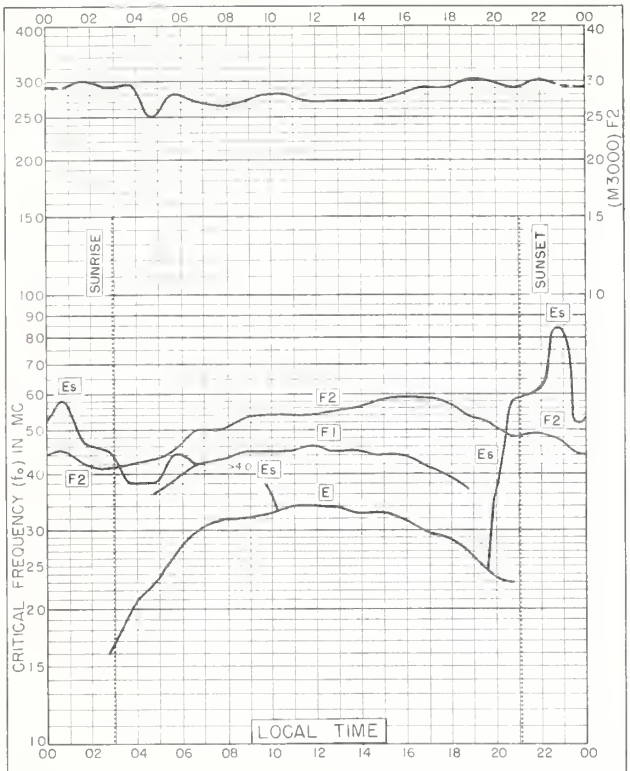


Fig. 21. CHURCHILL, CANADA
58.8°N, 94.2° W JUNE 1961

NBS 503

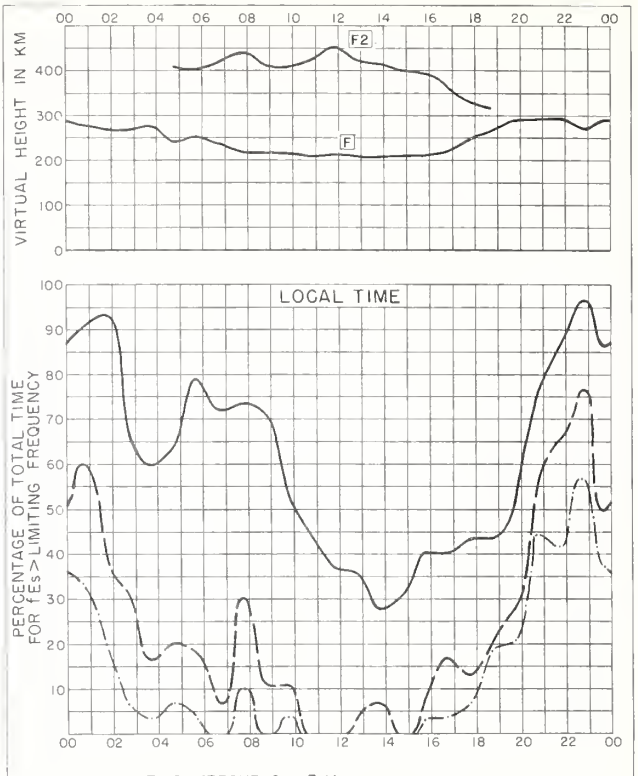


Fig. 22. CHURCHILL, CANADA JUNE 1961

NBS 490



Fig. 23. DE BILT, HOLLAND
52.1° N, 5.2° E JUNE 1961

NBS 503

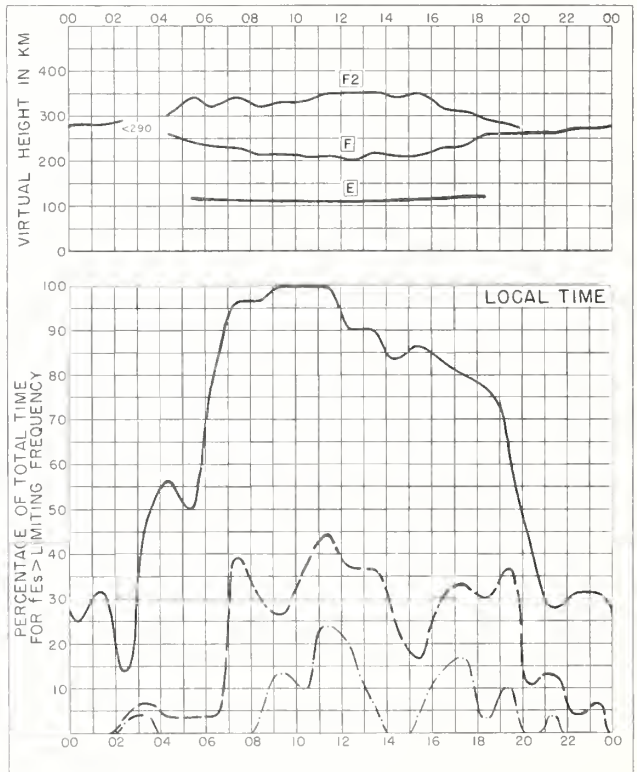


Fig. 24. DE BILT, HOLLAND JUNE 1961

NBS 490

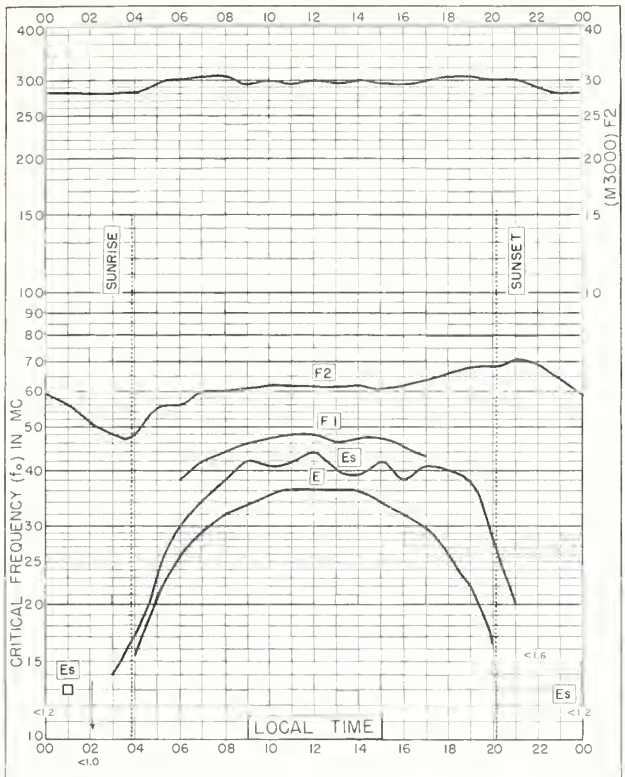


Fig. 25. SLOUGH, ENGLAND
51.5° N, 0.6° W JUNE 1961

NBS 503

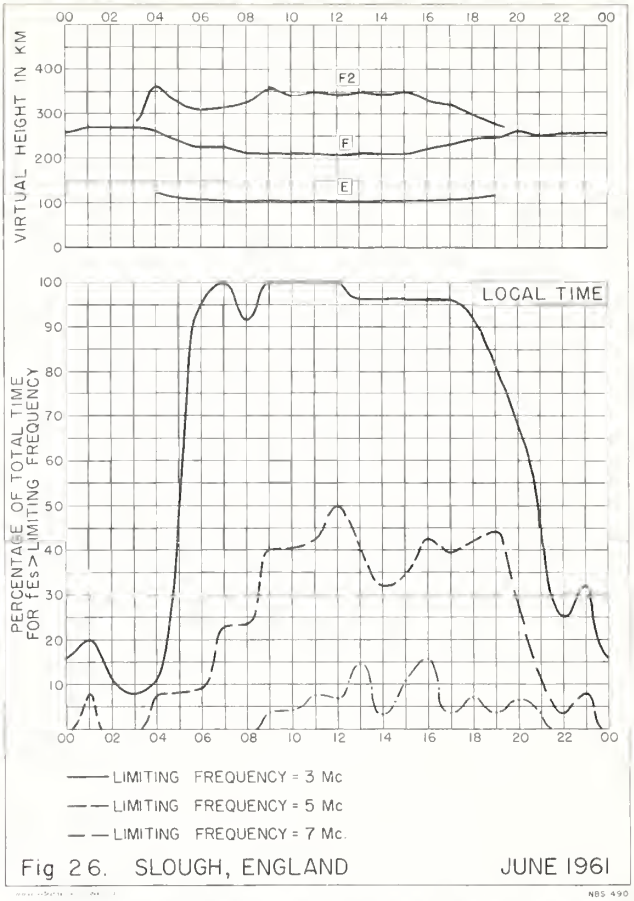


Fig 26. SLOUGH, ENGLAND JUNE 1961

NBS 490

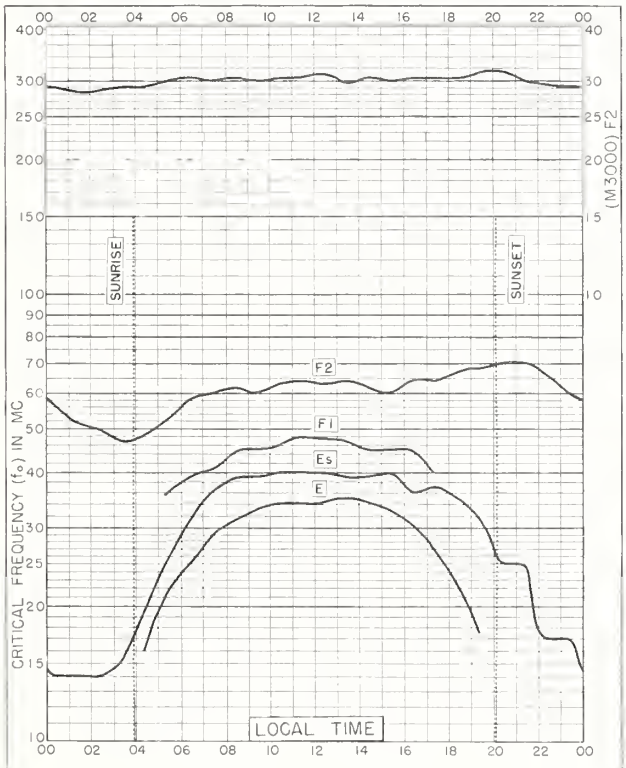


Fig. 27. DOURBES, BELGIUM
50.1° N, 4.6° E JUNE 1961

NBS 503

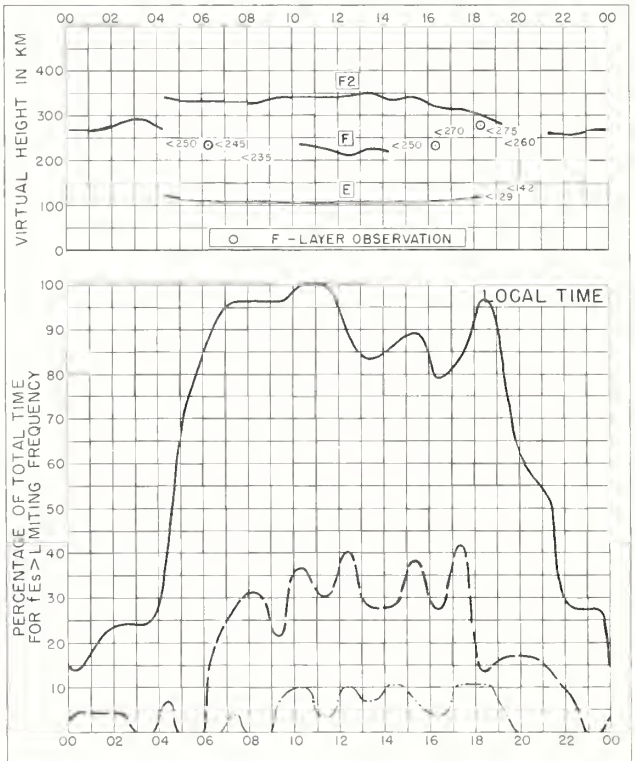


Fig. 28. DOURBES, BELGIUM JUNE 1961

NBS 490



Fig 29. PRUHONICE, CZECHOSLOVAKIA
50.0° N, 14.6° E JUNE 1961

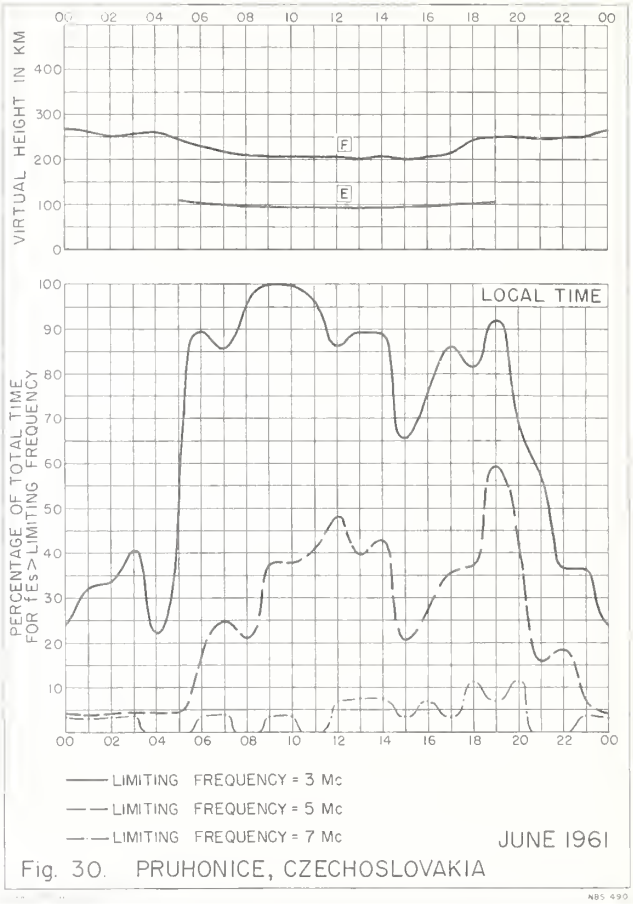


Fig. 30. PRUHONICE, CZECHOSLOVAKIA JUNE 1961

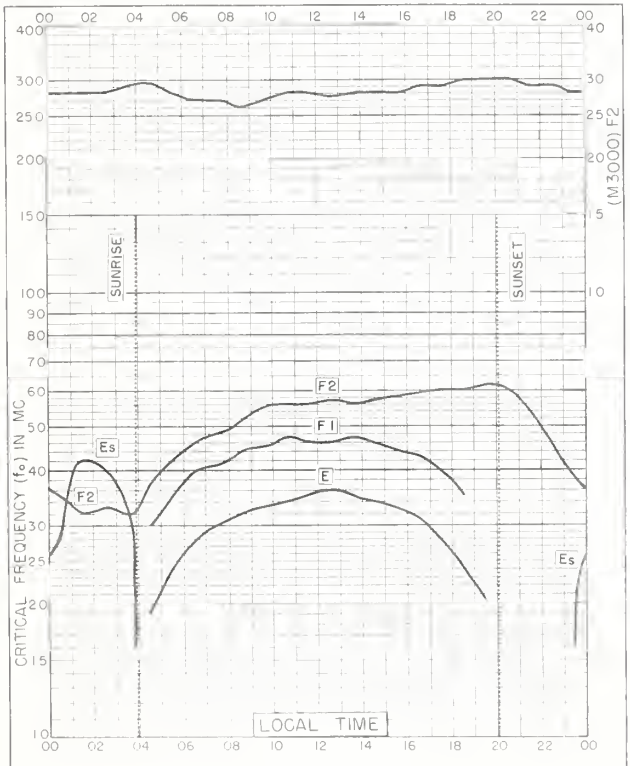


Fig. 31. WINNIPEG, CANADA
49.9° N, 97.4° W JUNE 1961

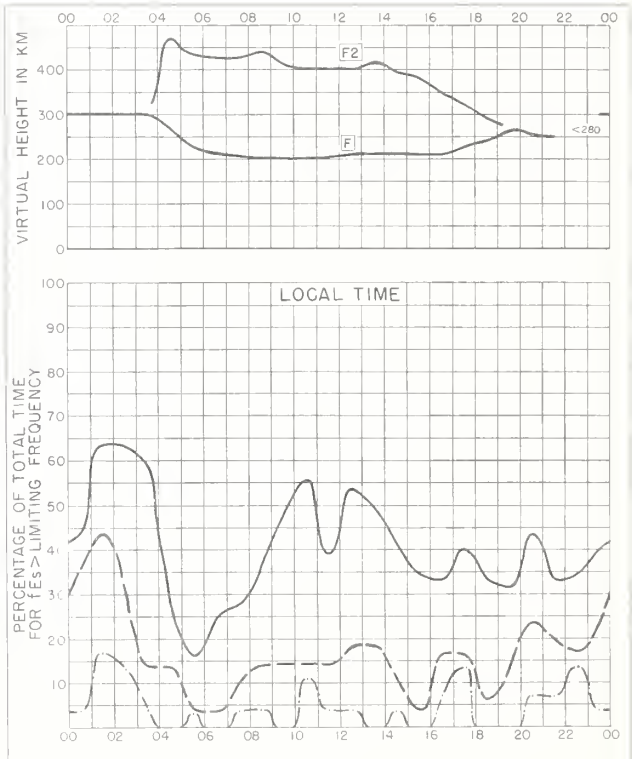


Fig. 32. WINNIPEG, CANADA JUNE 1961

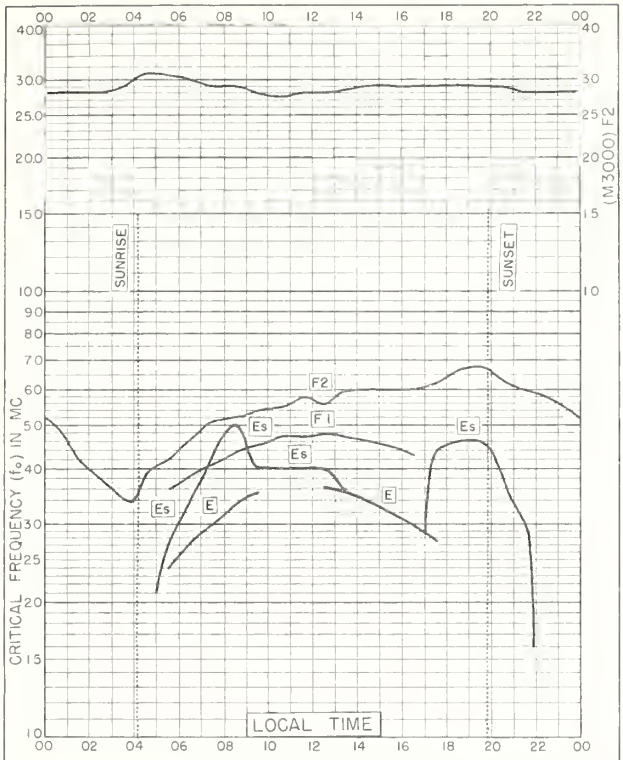


Fig. 33. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W JUNE 1961

NBS 503

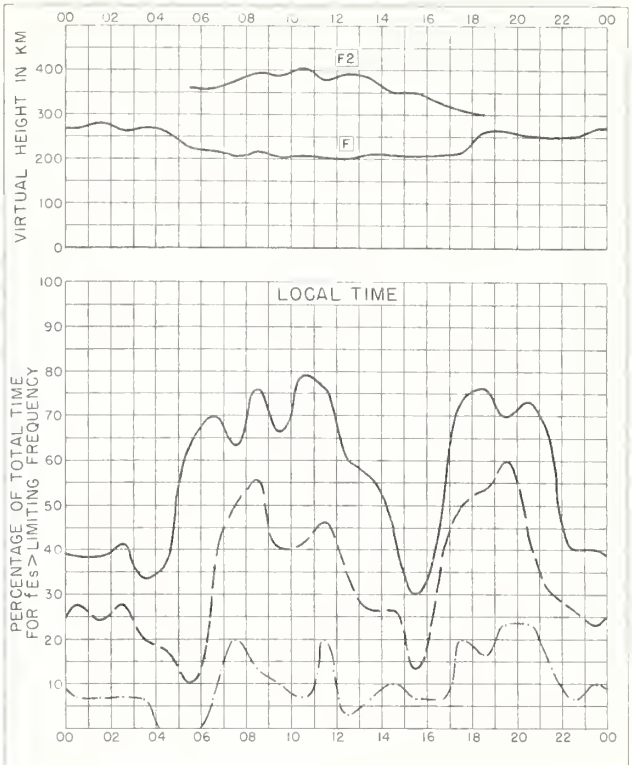


Fig. 34. ST. JOHN'S, NEWFOUNDLAND JUNE 1961

NBS 490

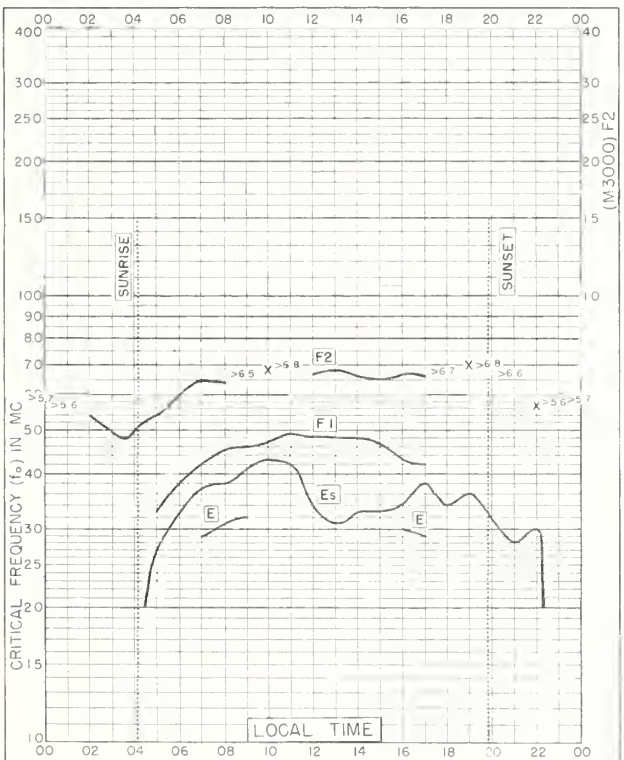


Fig. 35. GRAZ, AUSTRIA
47.1°N, 15.5°E JUNE 1961

NBS 503

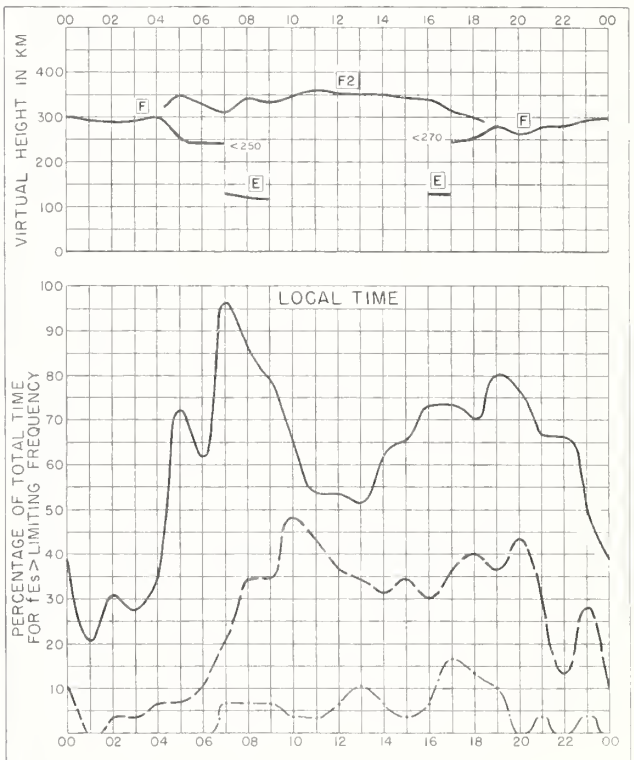


Fig. 36. GRAZ, AUSTRIA JUNE 1961

NBS 490

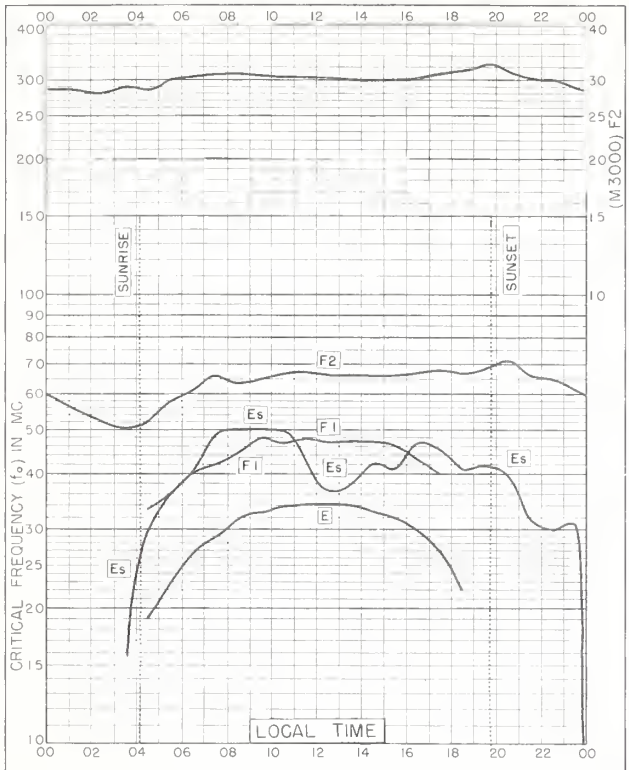


Fig. 37. SOTTENS, SWITZERLAND
46.6°N, 6.7°E JUNE 1961

NBS 503

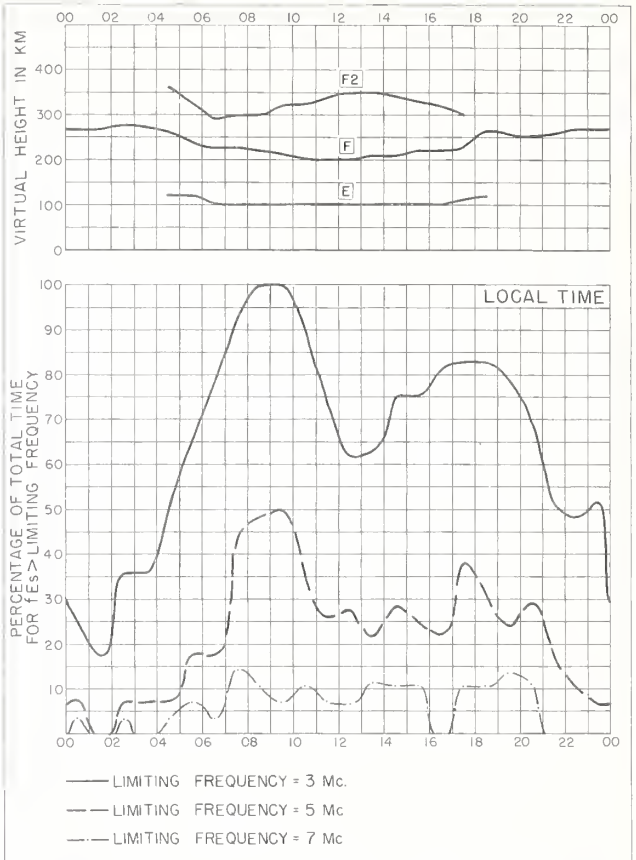


Fig. 38. SOTTENS, SWITZERLAND JUNE 1961

NBS 490

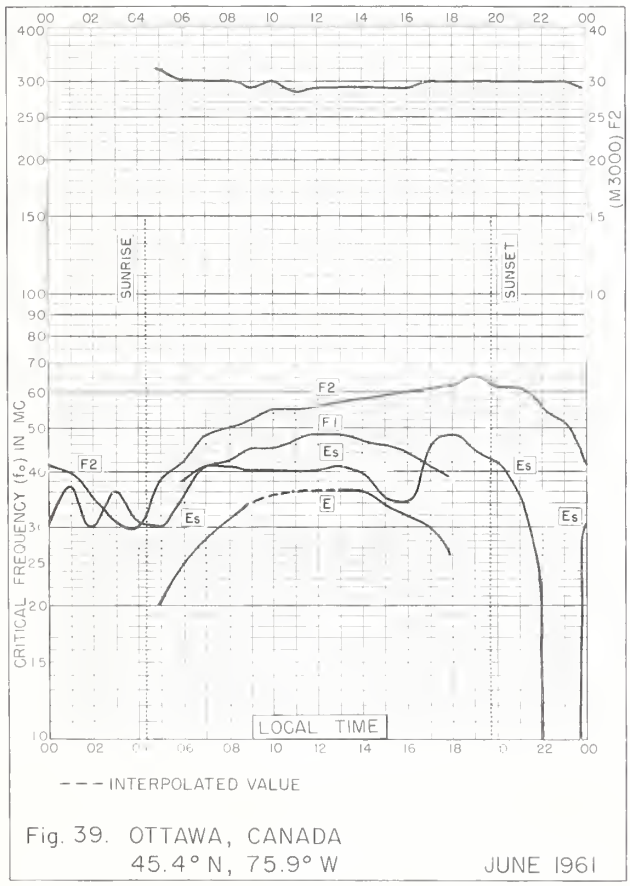


Fig. 39. OTTAWA, CANADA
45.4° N, 75.9° W JUNE 1961

NBS 503

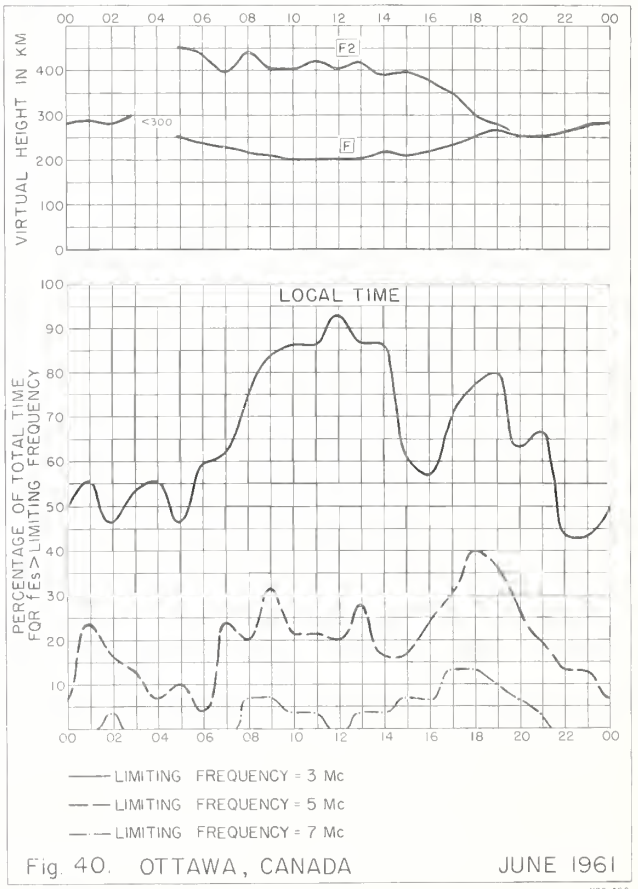


Fig. 40. OTTAWA, CANADA JUNE 1961

NBS 490

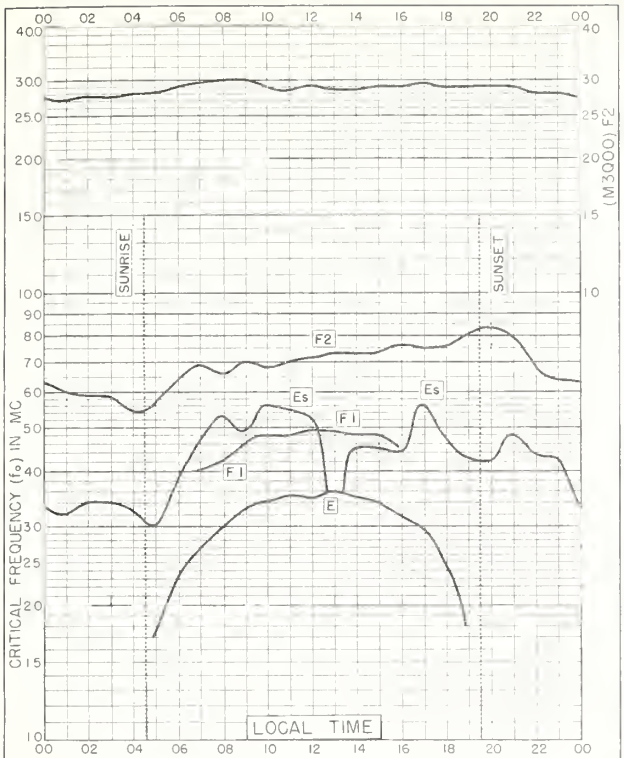


Fig. 41. ROME, ITALY
41.8° N, 12.5° E JUNE 1961

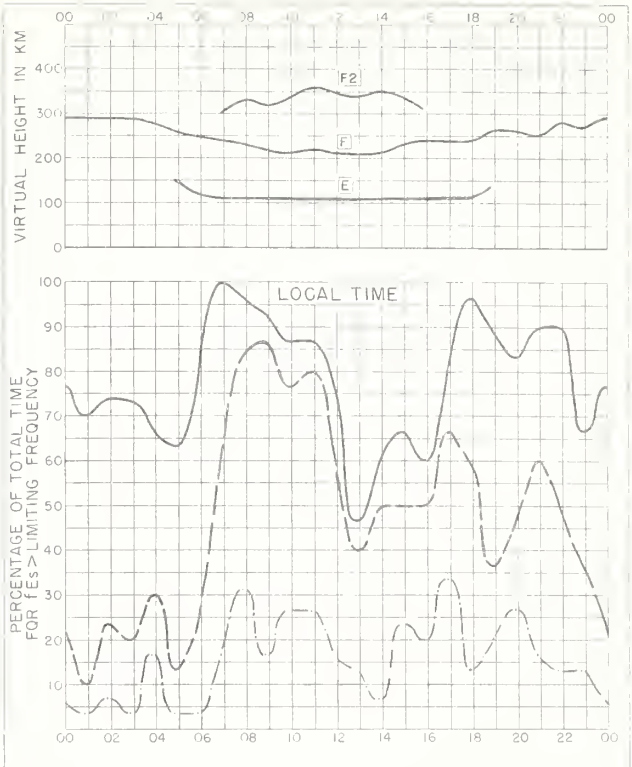


Fig. 42. ROME, ITALY JUNE 1961

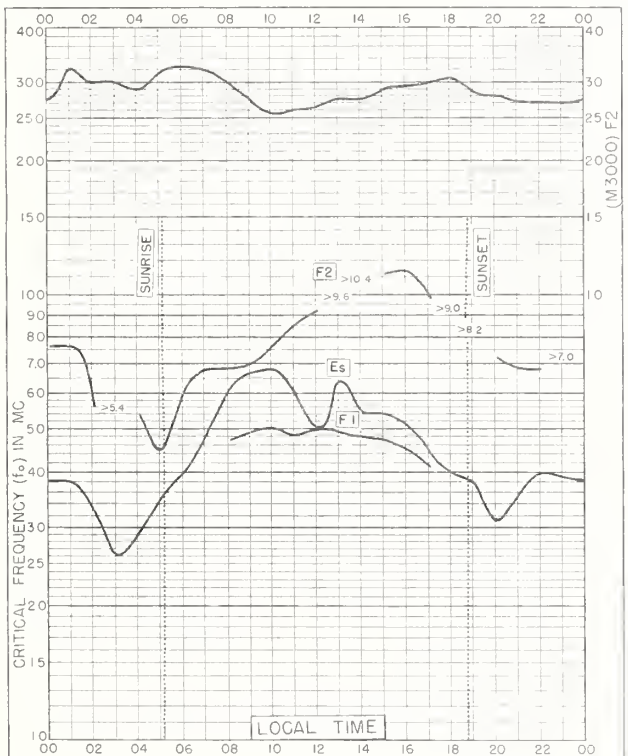


Fig. 43. FORMOSA, CHINA
25.0° N, 121.5° E JUNE 1961

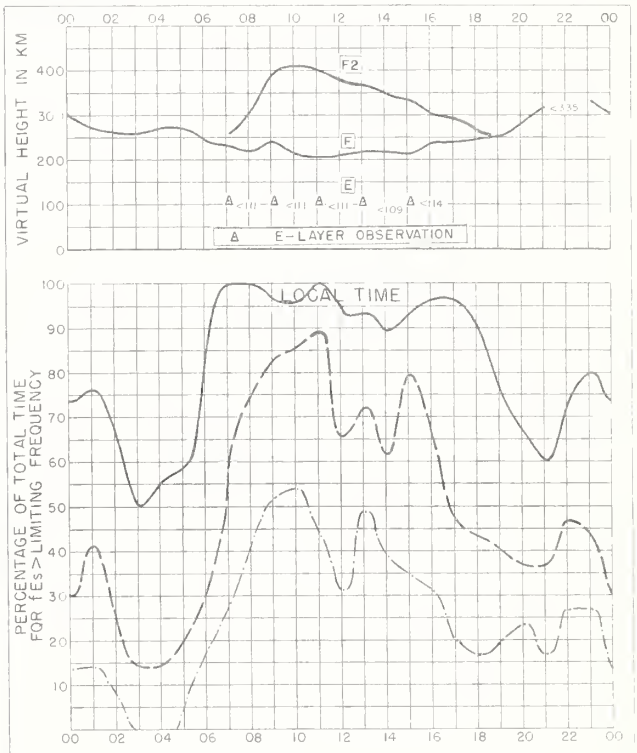


Fig. 44. FORMOSA, CHINA JUNE 1961

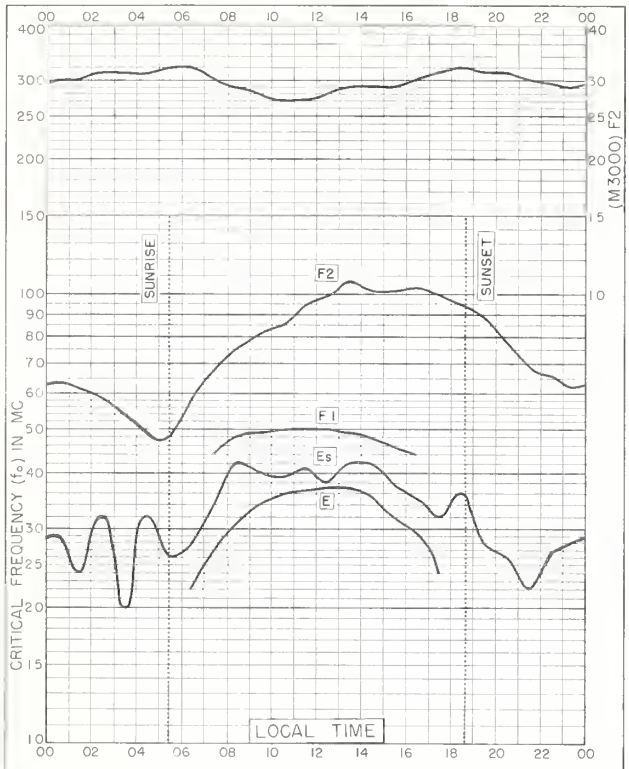


Fig. 45. EL CERILLO, MEXICO
19.3° N, 99.5° W JUNE 1961

NBS 503

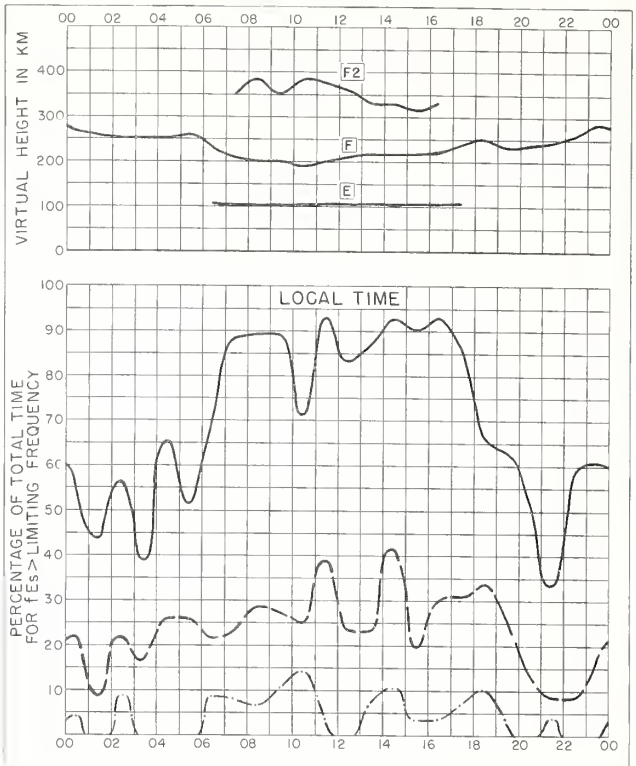


Fig. 46. EL CERILLO, MEXICO JUNE 1961

NBS 490

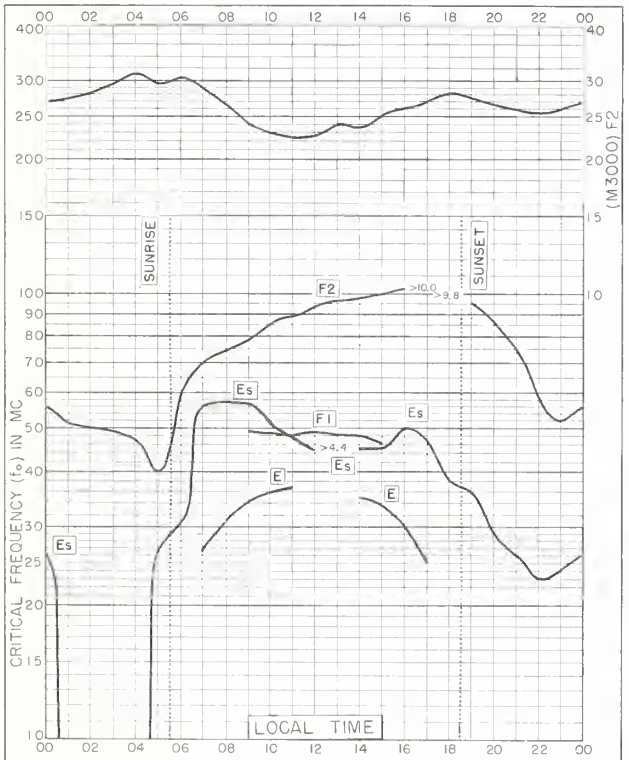


Fig. 47. BAGUIO, P.I.
16.4° N, 120.6° E JUNE 1961

NBS 503

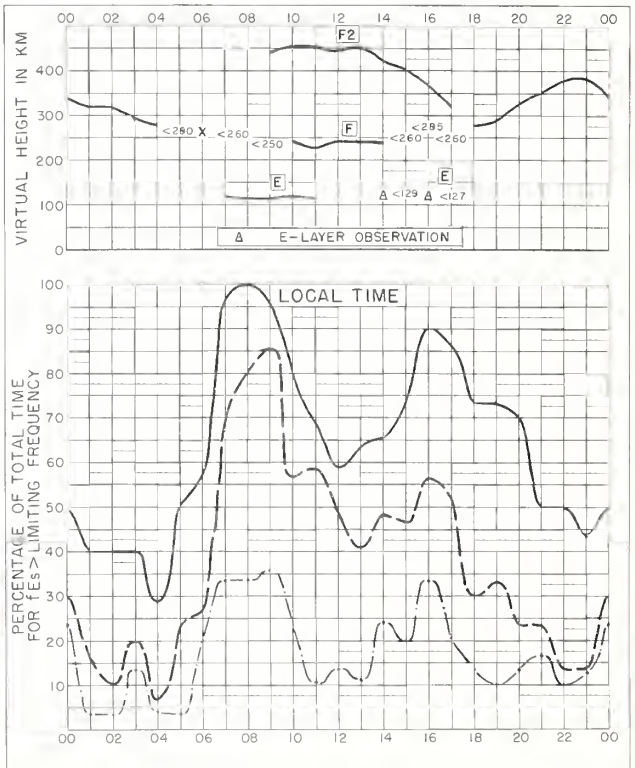


Fig. 48. BAGUIO, P.I. JUNE 1961

NBS 490

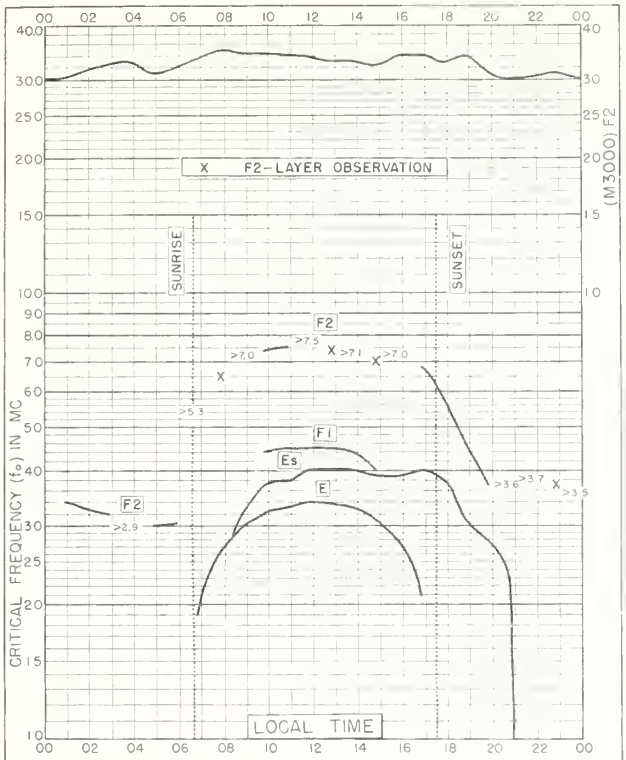


Fig. 49. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E JUNE 1961

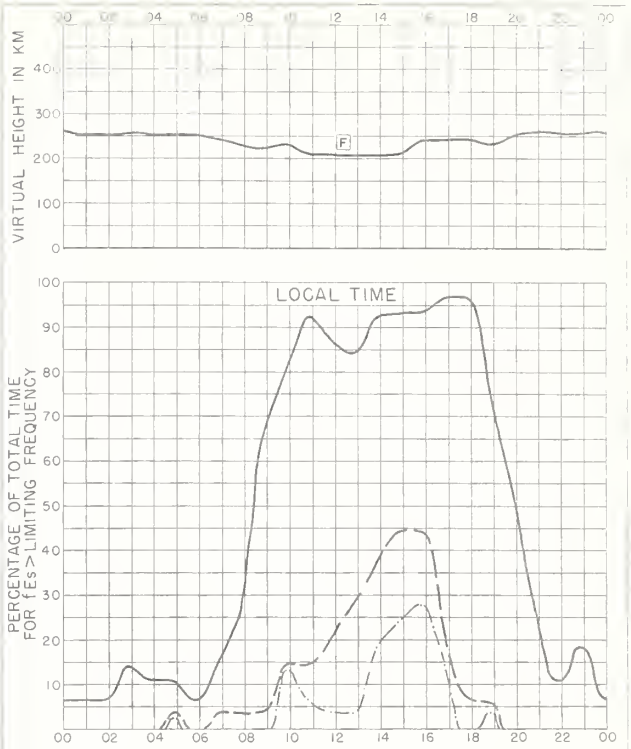


Fig. 50. TOWNSVILLE, AUSTRALIA JUNE 1961

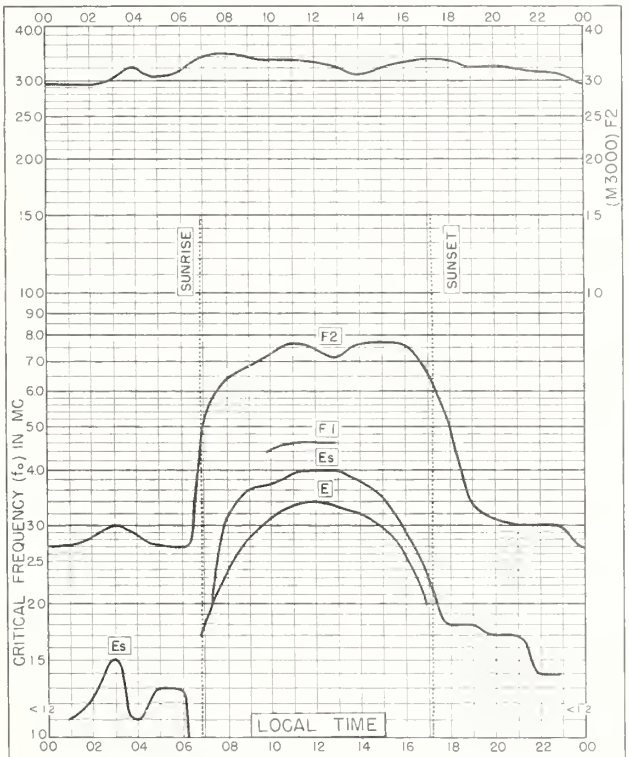


Fig. 51. JOHANNESBURG, UNION OF S. AFRICA
26.1°S, 28.1°E JUNE 1961

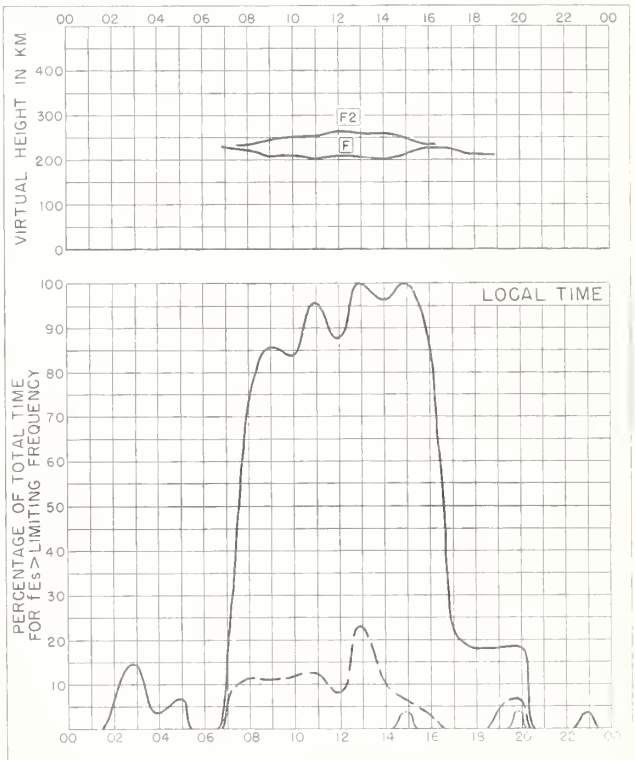


Fig. 52. JOHANNESBURG, UNION OF S. AFRICA JUNE 1961



Fig. 53. BRISBANE, AUSTRALIA
27.5° S, 152.9° E JUNE 1961

NBS 503

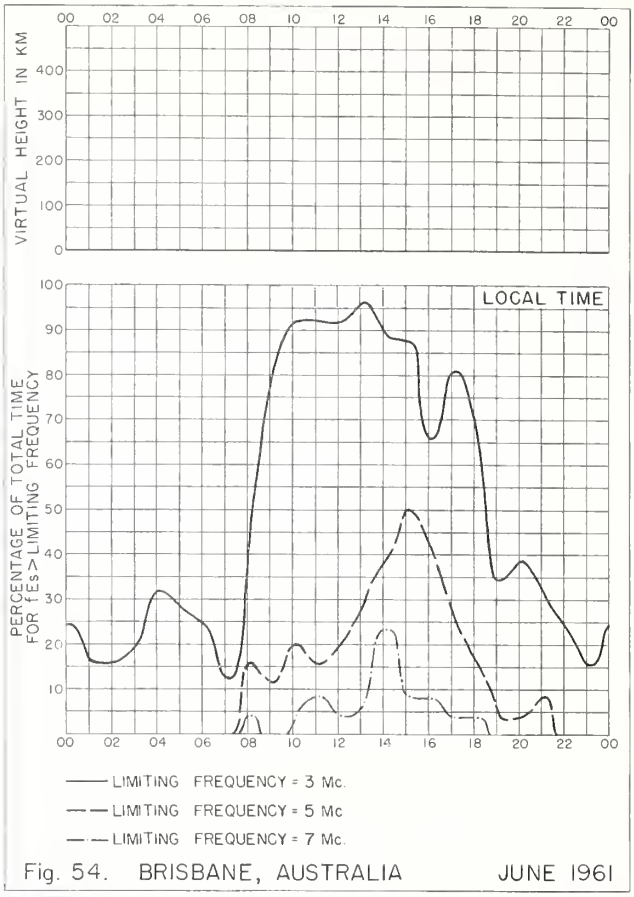


Fig. 54. BRISBANE, AUSTRALIA JUNE 1961

NBS 490

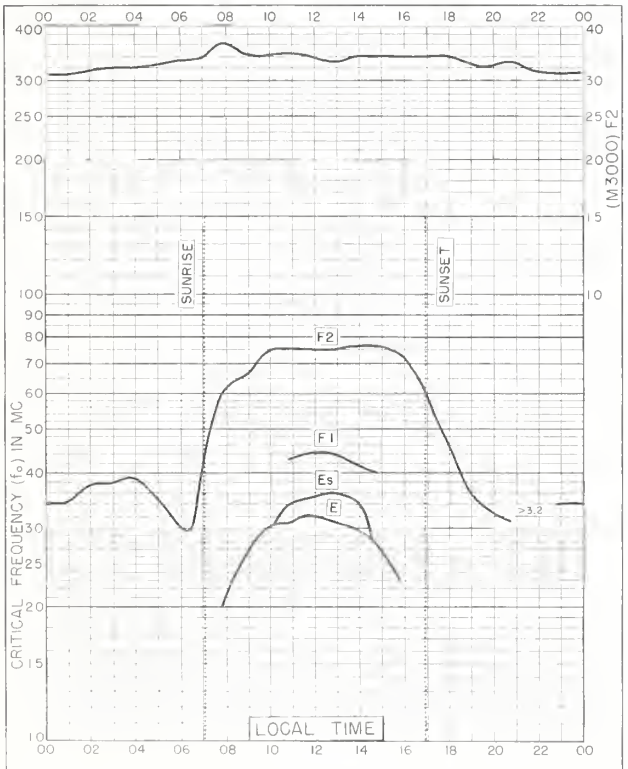


Fig. 55. MUNDARING, W. AUSTRALIA
32.0° S, 116.2° E JUNE 1961

NBS 503

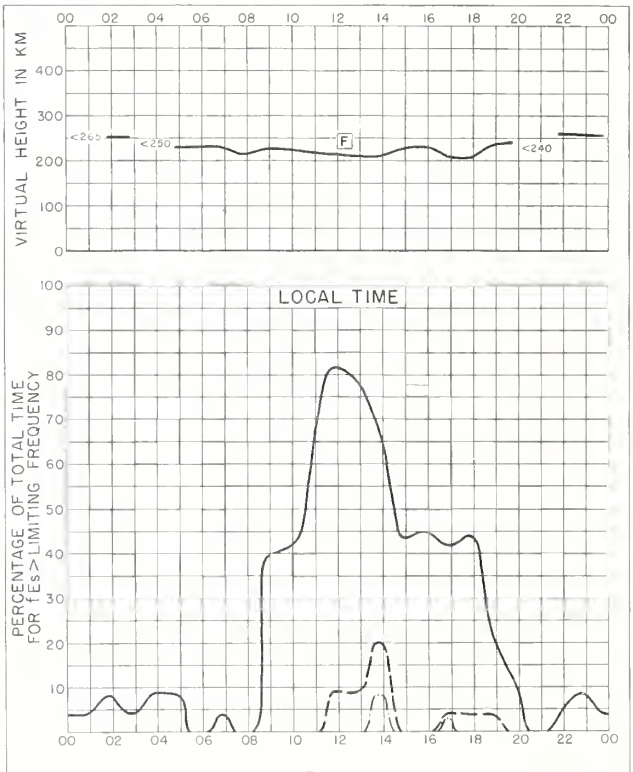


Fig 56. MUNDARING, W. AUSTRALIA JUNE 1961

NBS 490

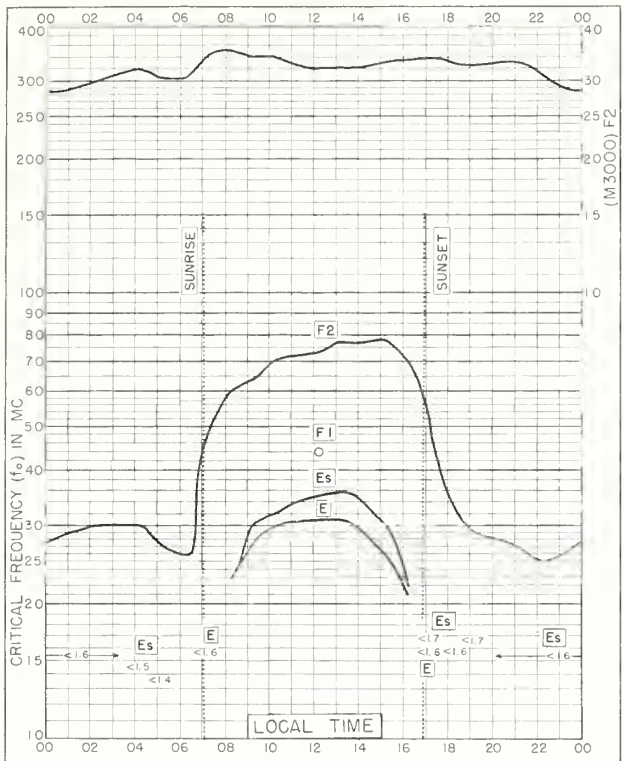


Fig. 57. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E JUNE 1961

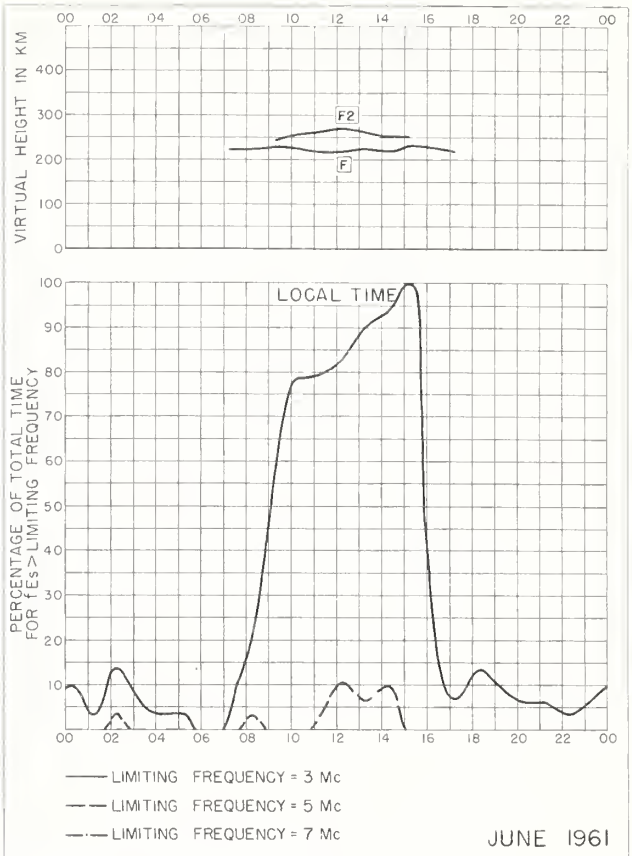


Fig. 58. CAPETOWN, UNION OF S. AFRICA JUNE 1961

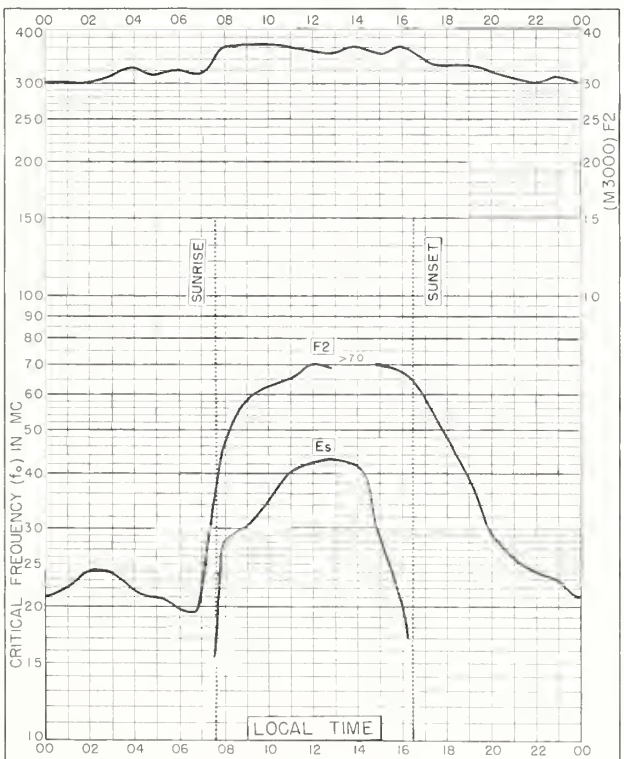


Fig. 59. HOBART, TASMANIA
42.9° S, 147.2° E JUNE 1961

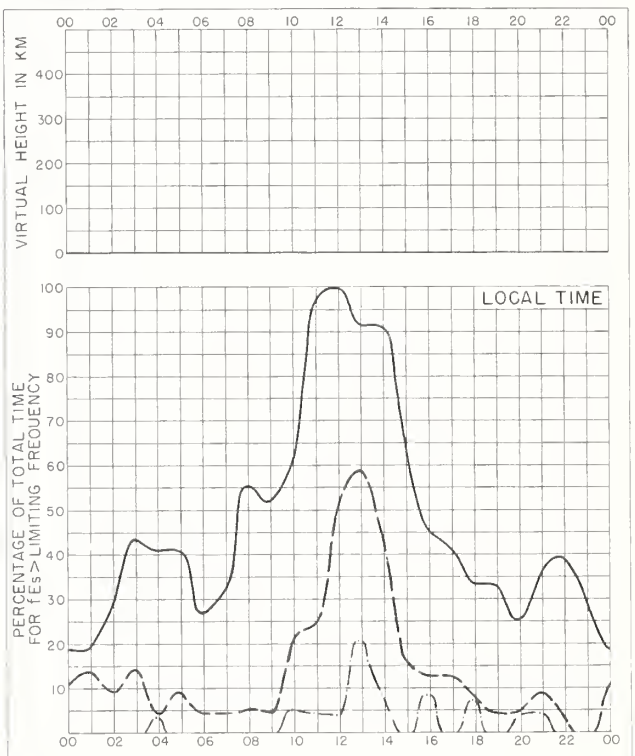


Fig 60. HOBART, TASMANIA JUNE 1961

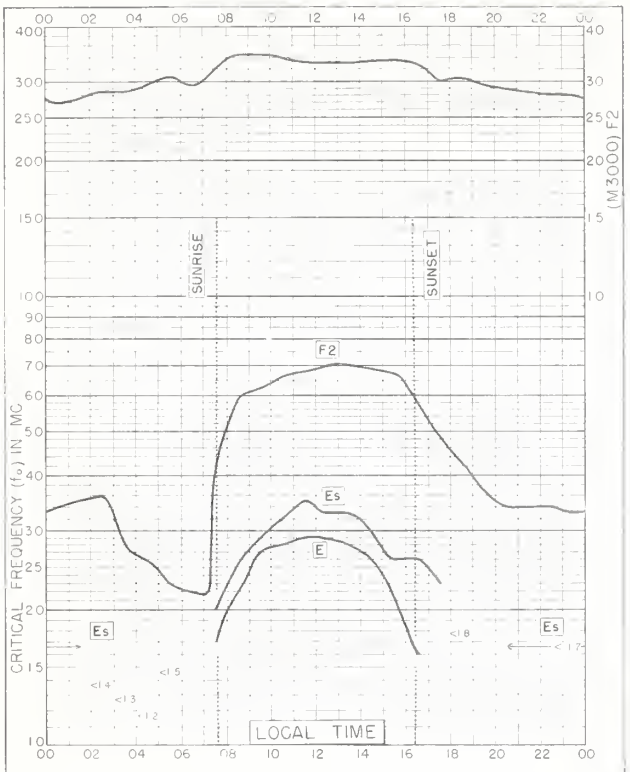


Fig. 61. CHRISTCHURCH, NEW ZEALAND
43.6° S, 172.8° E JUNE 1961

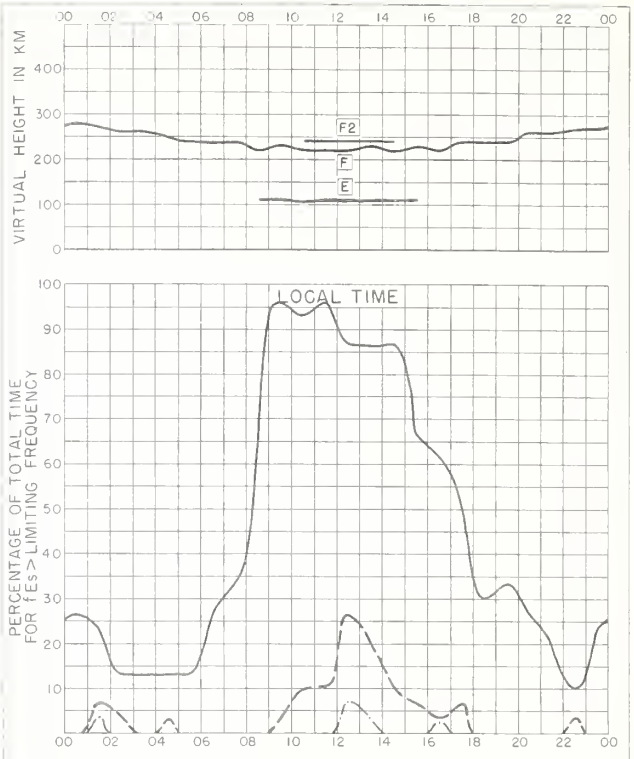


Fig. 62. CHRISTCHURCH, NEW ZEALAND JUNE 1961

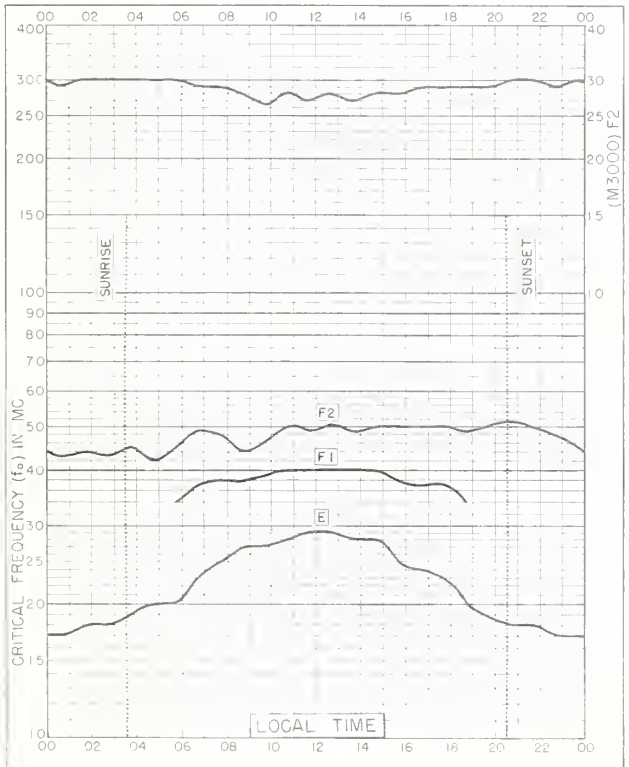


Fig. 63. RESOLUTE BAY, CANADA
74.7° N, 94.9° W APRIL 1961

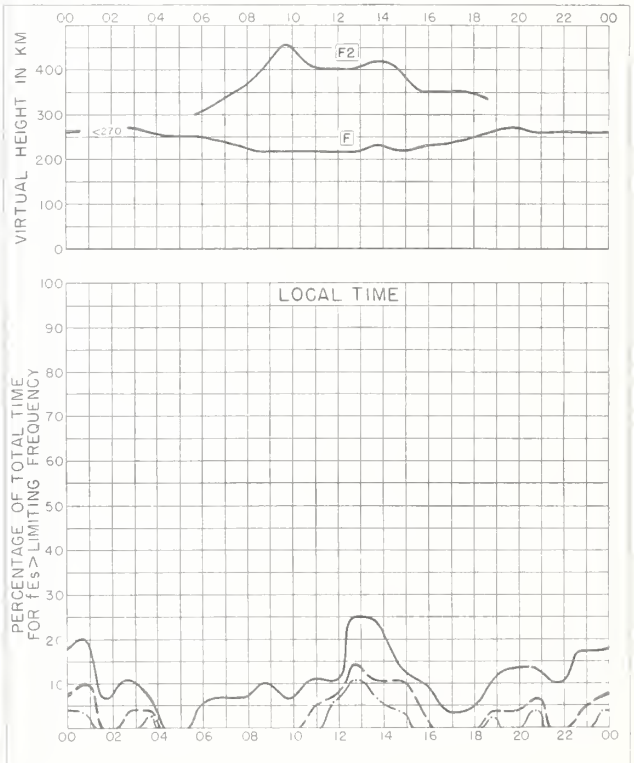


Fig. 64. RESOLUTE BAY, CANADA APRIL 1961

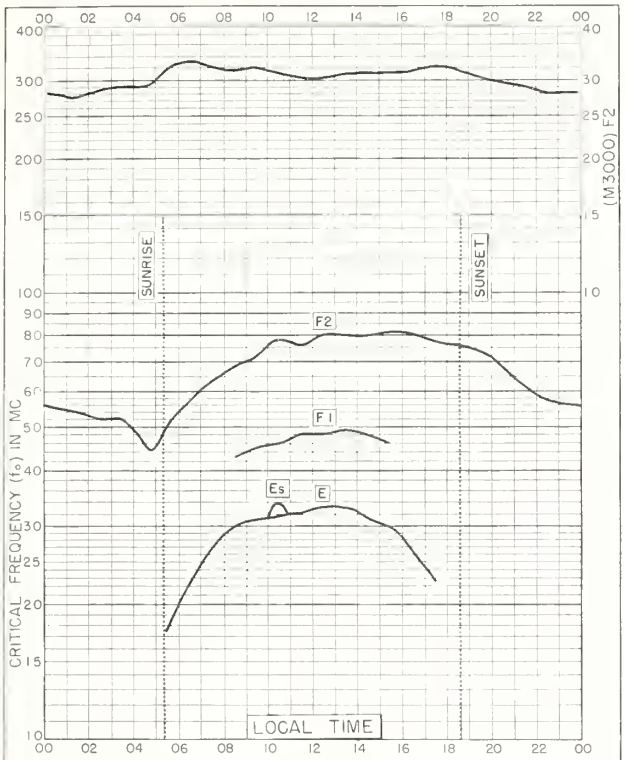


Fig. 65. WAKKANAI, JAPAN
45.4° N, 141.7° E APRIL 1961

NBS 503

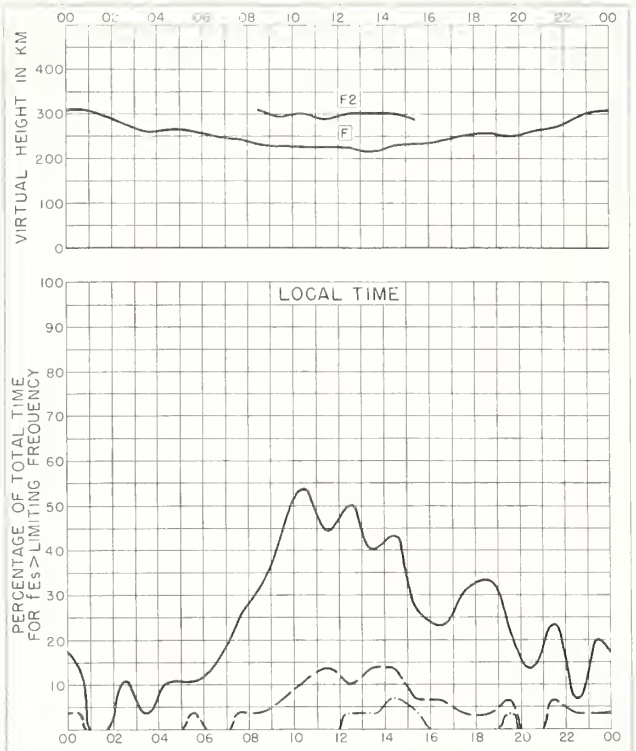


Fig. 66. WAKKANAI, JAPAN APRIL 1961

NBS 490



Fig. 67. AKITA, JAPAN
39.7° N, 140.1° E APRIL 1961

NBS 503

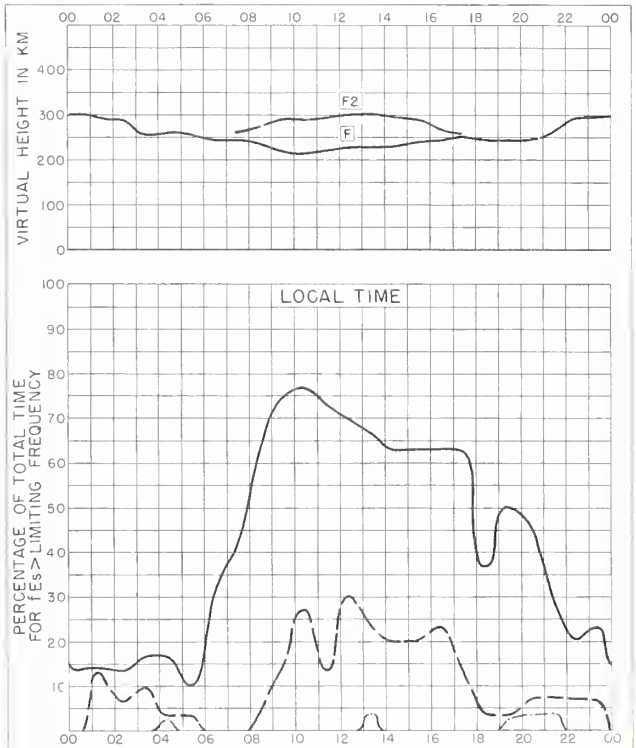


Fig. 68. AKITA, JAPAN APRIL 1961

NBS 490

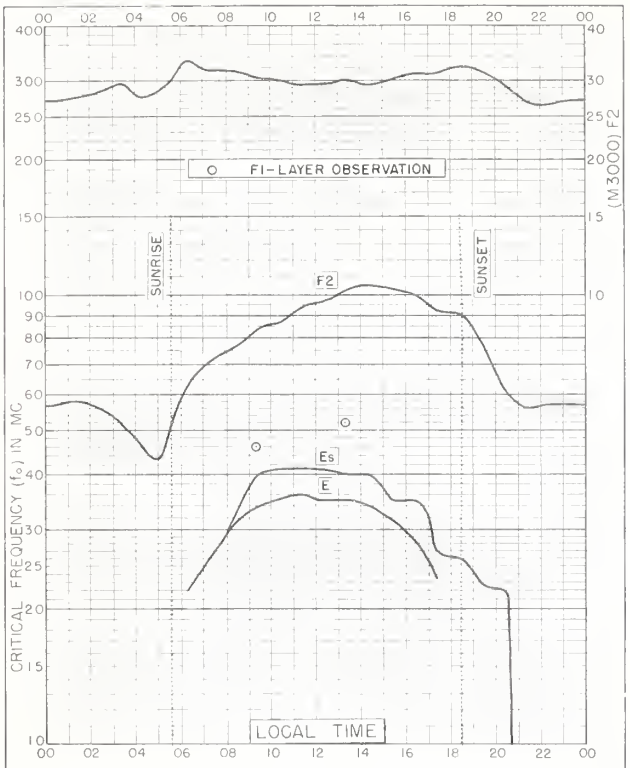


Fig. 69. TOKYO, JAPAN
35.7° N, 139.5° E APRIL 1961

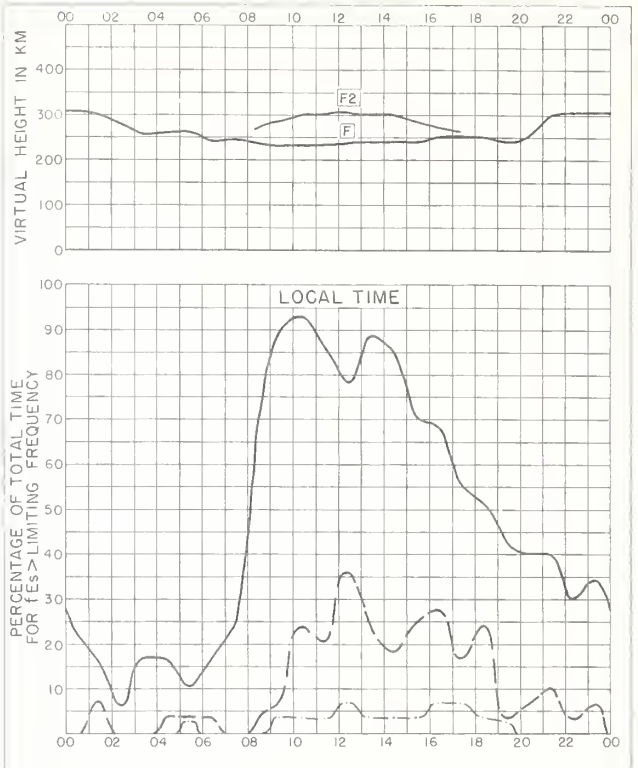


Fig. 70. TOKYO, JAPAN APRIL 1961

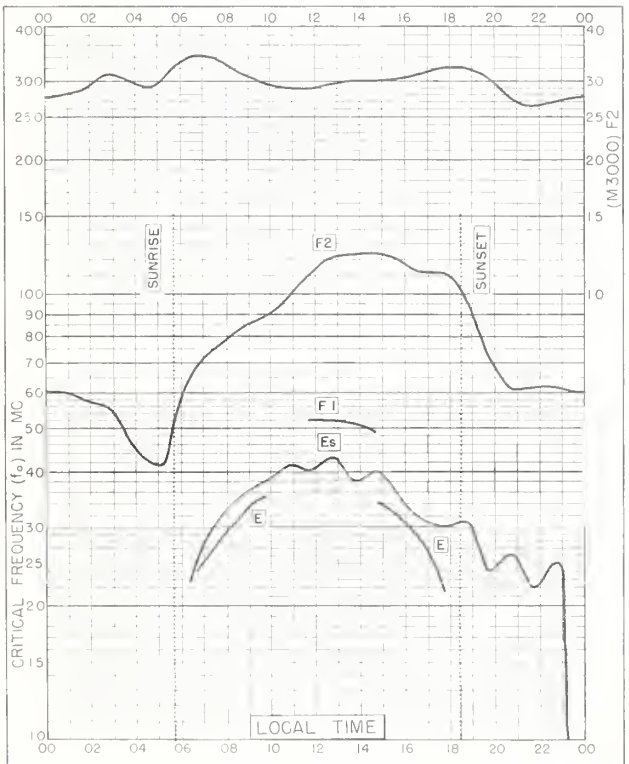


Fig 71. YAMAGAWA, JAPAN
31.2° N, 130.6° E APRIL 1961

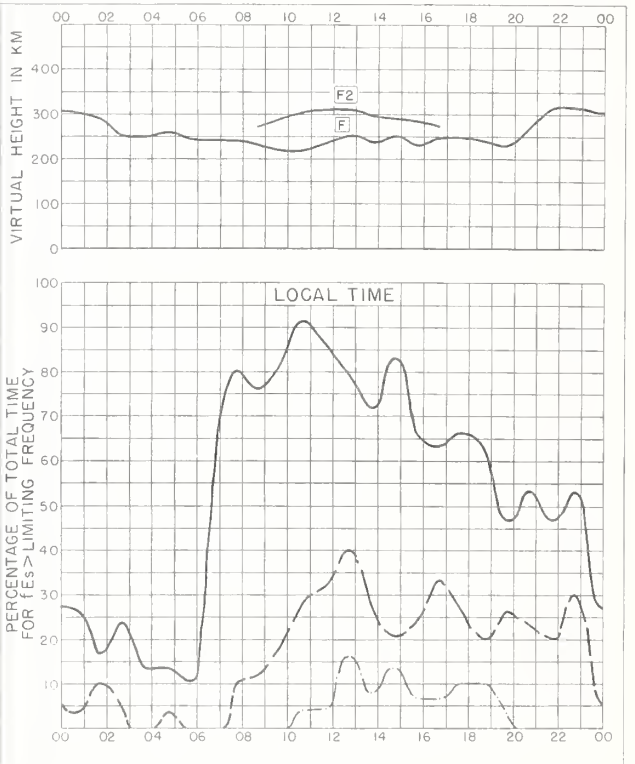


Fig. 72. YAMAGAWA, JAPAN APRIL 1961

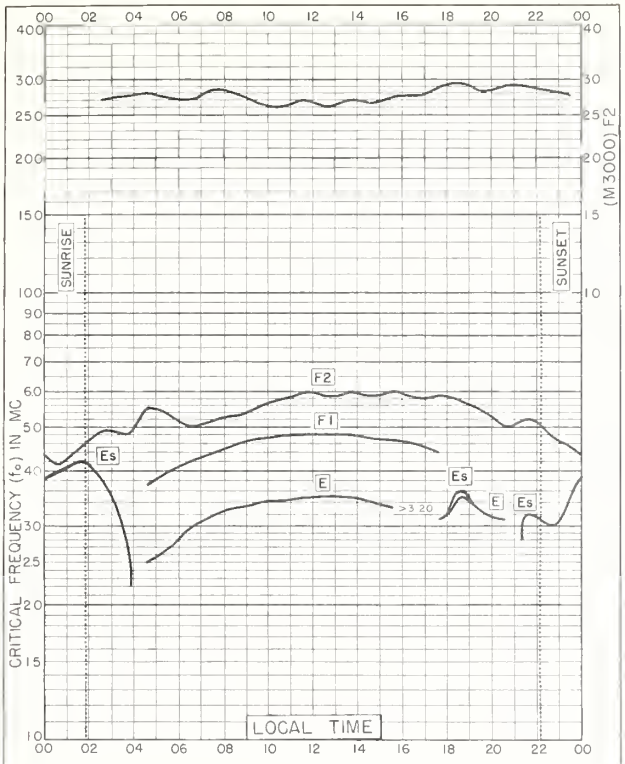


Fig. 73. REYKJAVIK, ICELAND
64.1°N, 21.8°W JUNE 1960

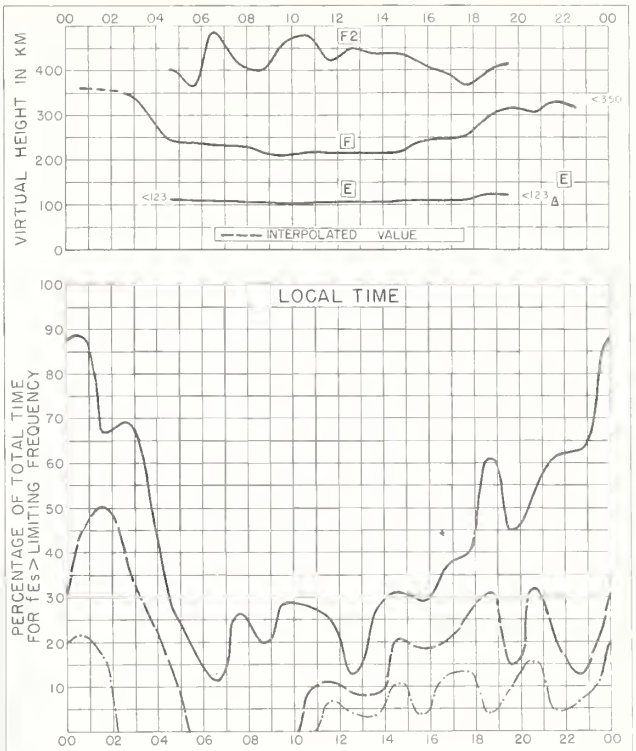


Fig. 74. REYKJAVIK, ICELAND JUNE 1960



Fig. 75. La PAZ, BOLIVIA
16.5°S, 68.1°W JUNE 1960

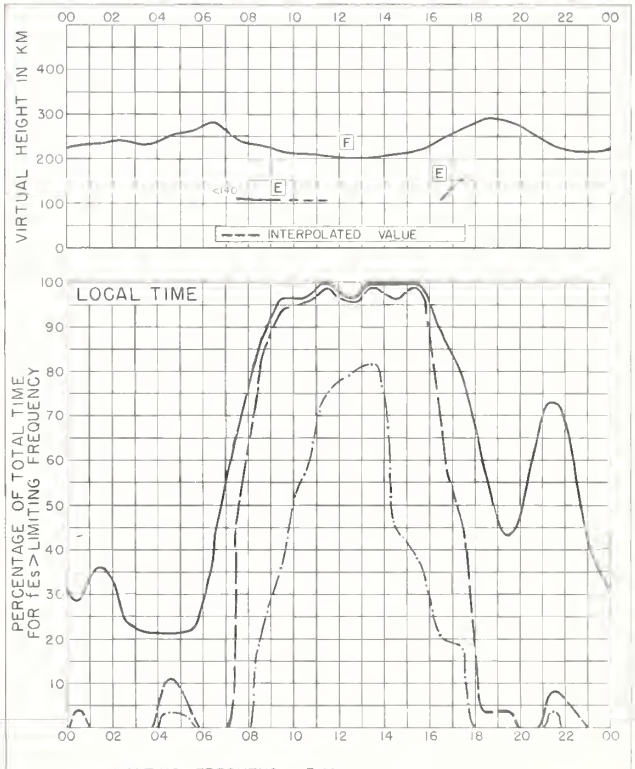


Fig. 76. La PAZ, BOLIVIA JUNE 1960



Fig. 77. CONCEPCION, CHILE
36.6°S, 73.0°W JUNE 1960

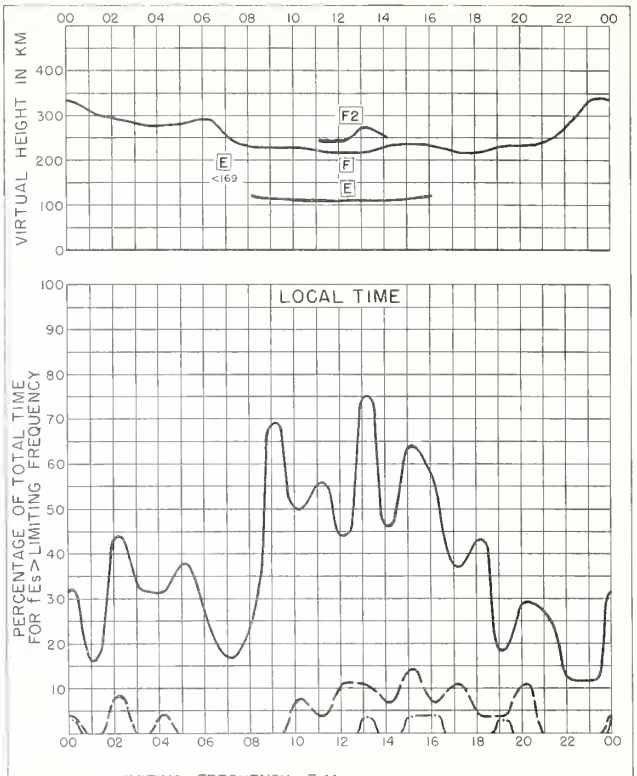


Fig. 78. CONCEPCION, CHILE JUNE 1960

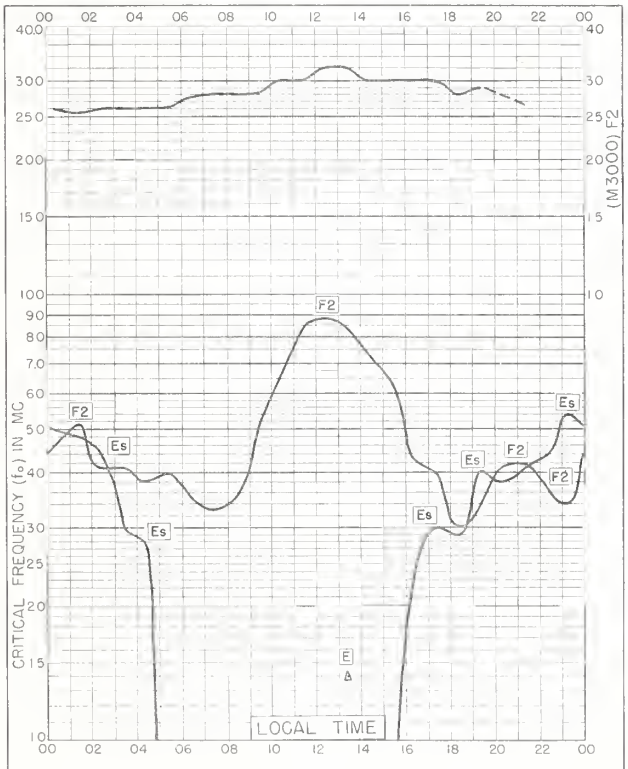


Fig. 79. KIRUNA, SWEDEN
67.8°N, 20.3°E DECEMBER 1959

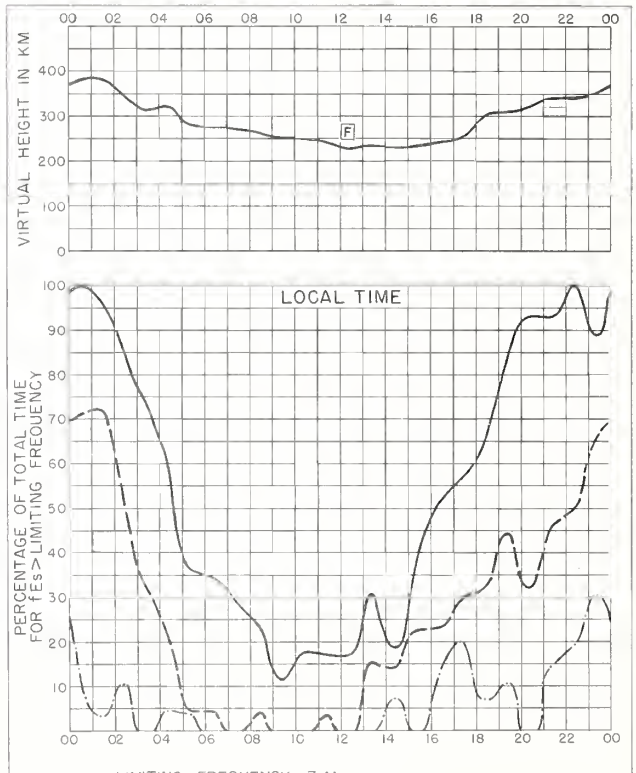


Fig. 80. KIRUNA, SWEDEN DECEMBER 1959

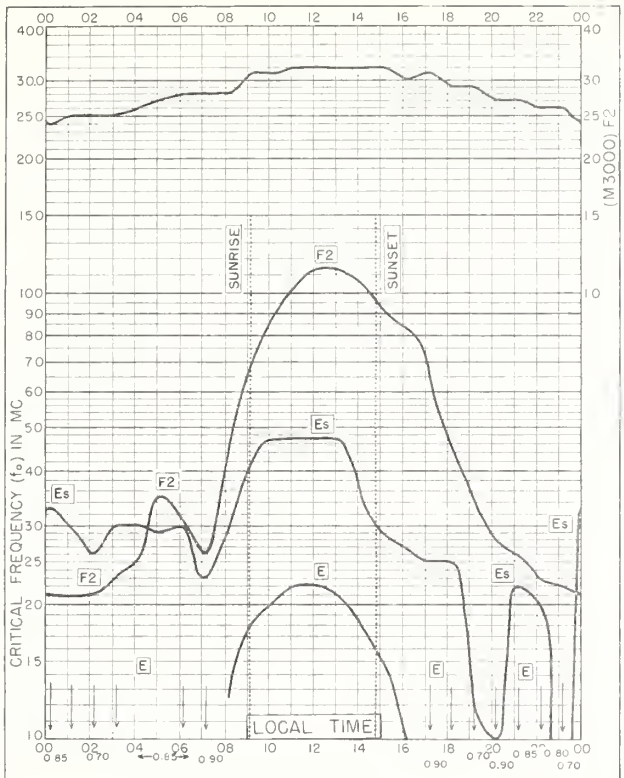


Fig. 81. UPSALA, SWEDEN
59.8° N, 17.6° E DECEMBER 1959

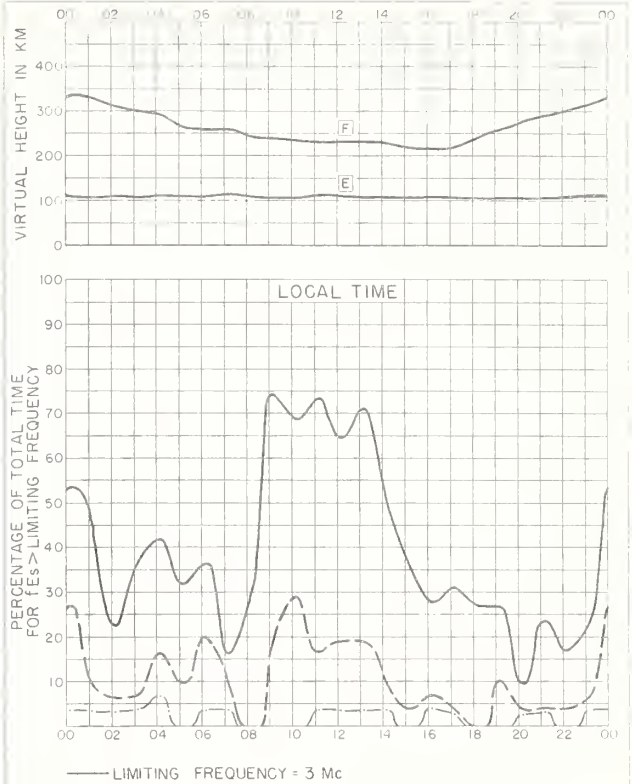


Fig. 82. UPSALA, SWEDEN DECEMBER 1959

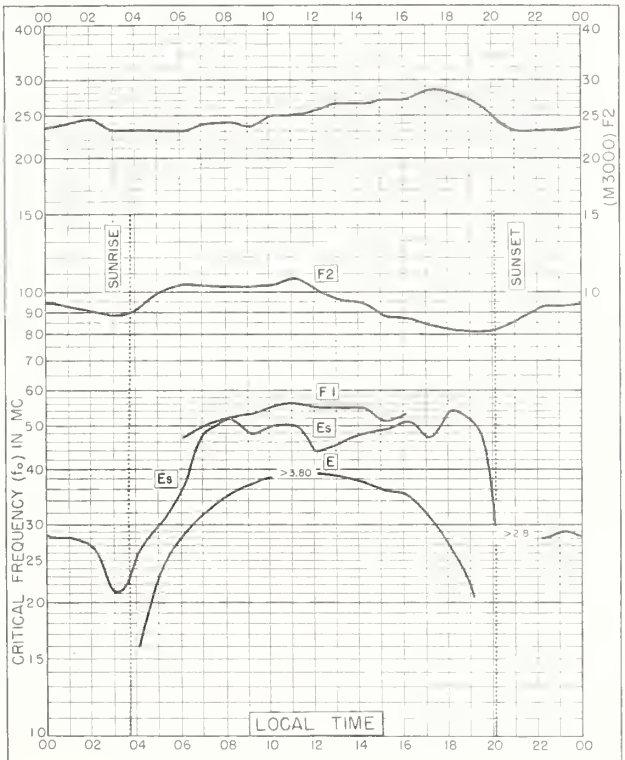


Fig. 83. FALKLAND IS.
51.7° S, 57.8° W DECEMBER 1959

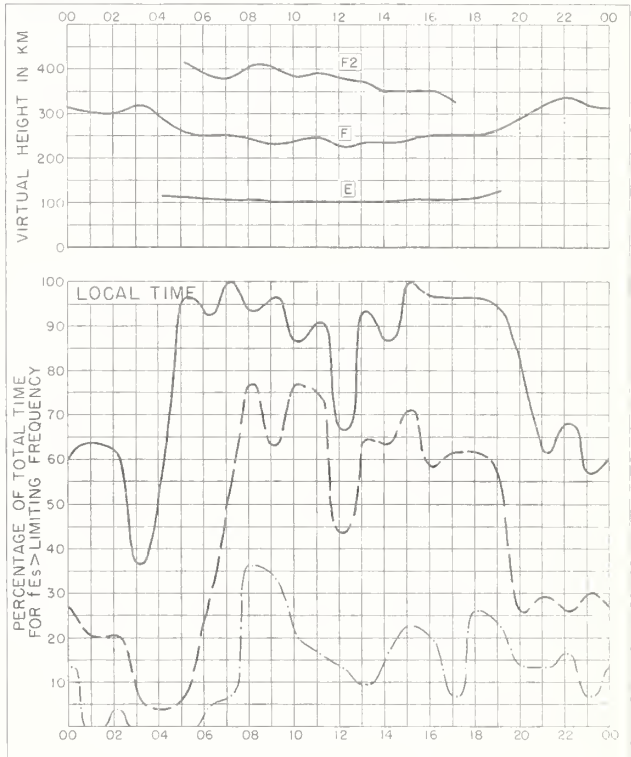


Fig. 84. FALKLAND IS. DECEMBER 1959

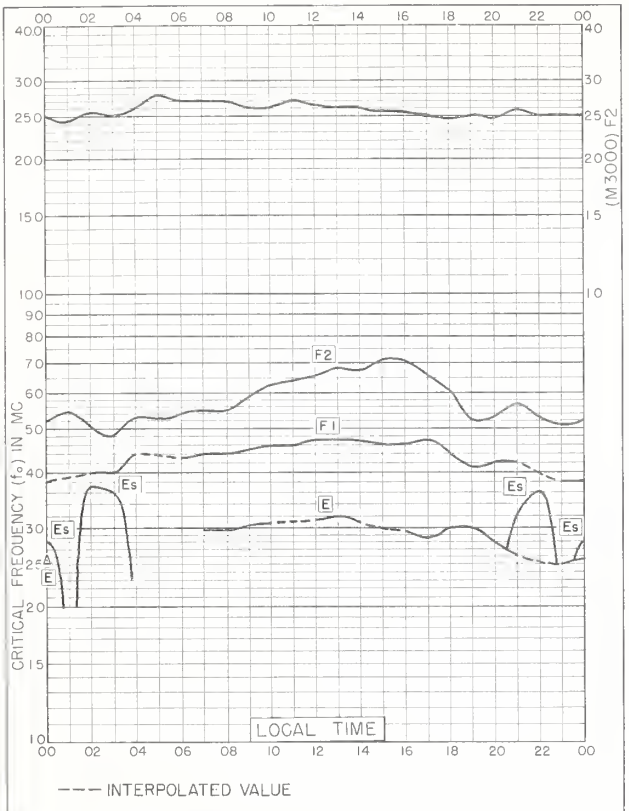


Fig. 85. BYRD STATION
80.0° S, 120.0° W DECEMBER 1959

NBS 503

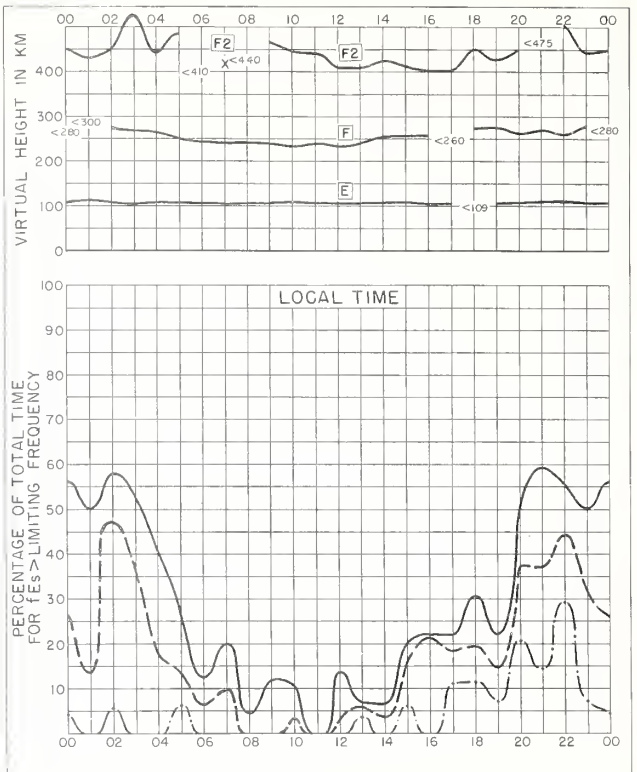


Fig. 86. BYRD STATION DECEMBER 1959

NBS 490

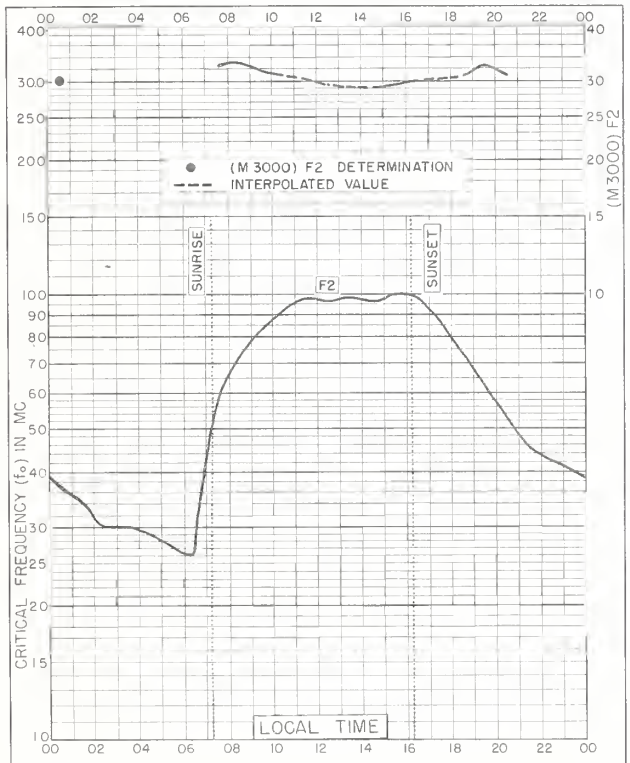


Fig. 87. WINNIPEG, CANADA
49.9° N, 97.4° W NOVEMBER 1959

NBS 503

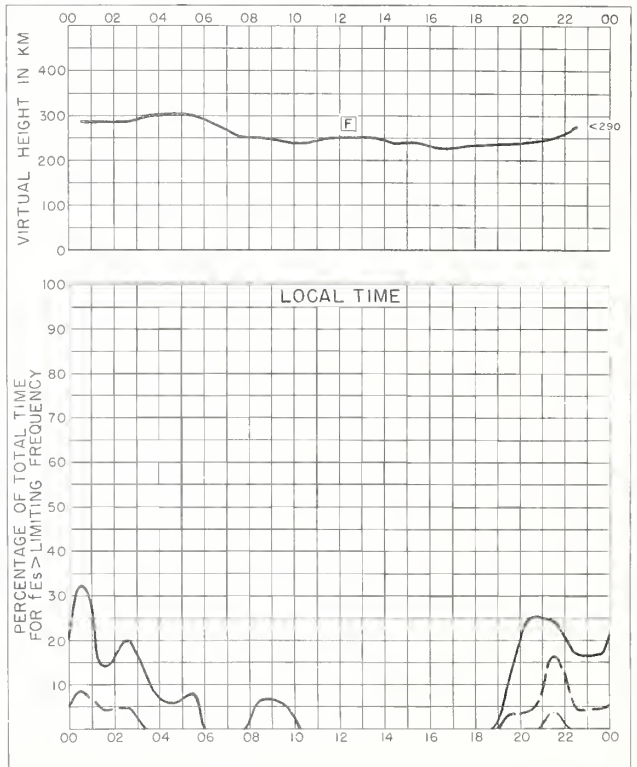


Fig 88. WINNIPEG, CANADA NOVEMBER 1959

NBS 490

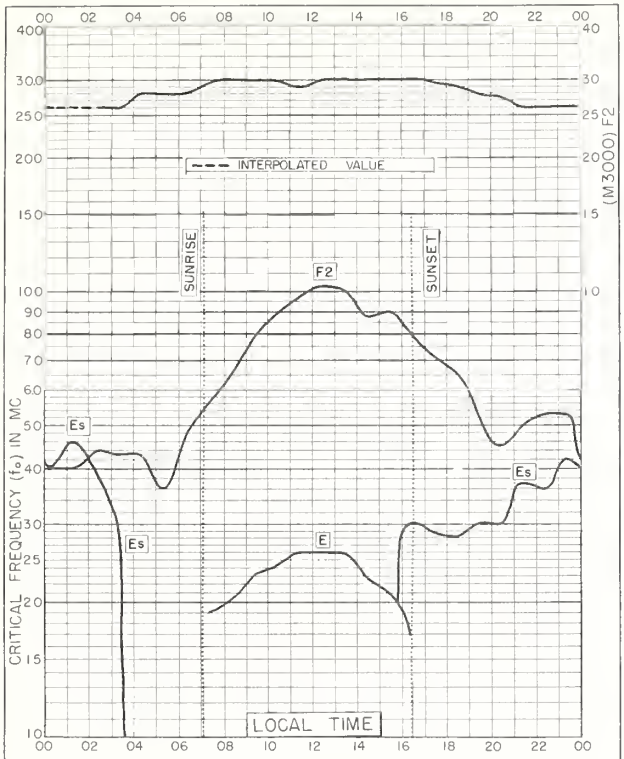


Fig. 89. KIRUNA, SWEDEN
67.8° N, 20.3° E OCTOBER 1959

NBS 503

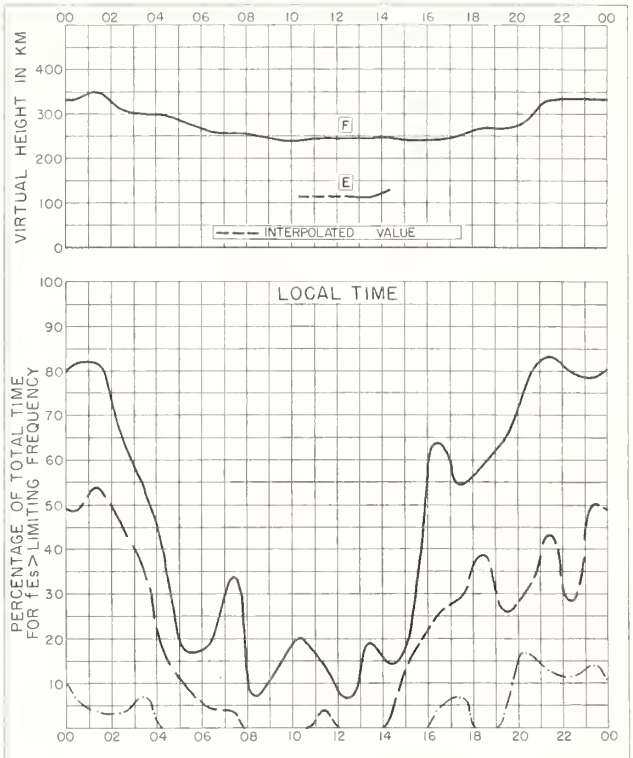


Fig. 90. KIRUNA, SWEDEN OCTOBER 1959

NBS 490

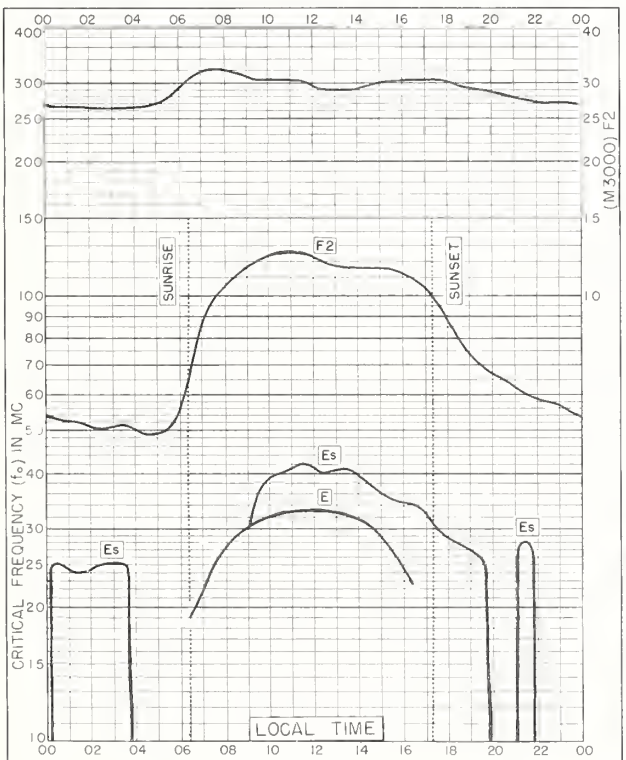


Fig. 91. WAKKANAI, JAPAN
45.4° N, 141.7° E OCTOBER 1959

NBS 503

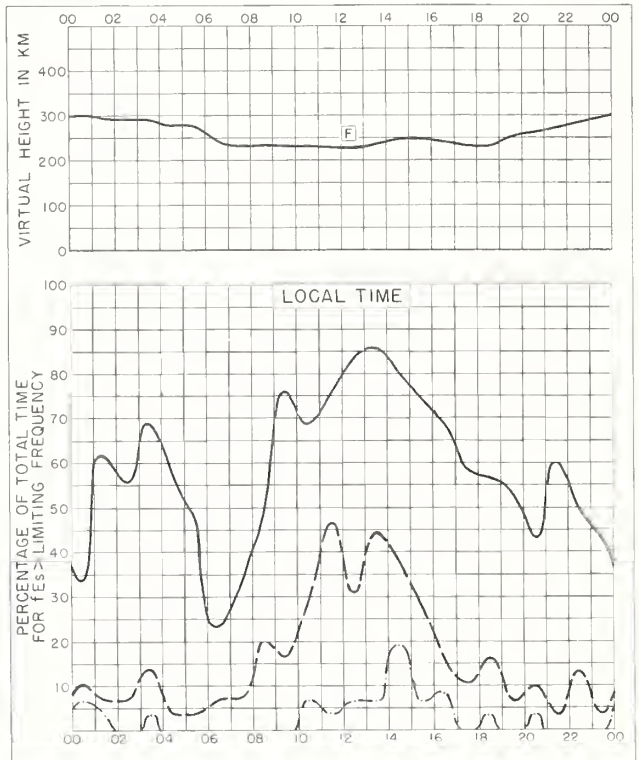


Fig. 92. WAKKANAI, JAPAN OCTOBER 1959

NBS 490

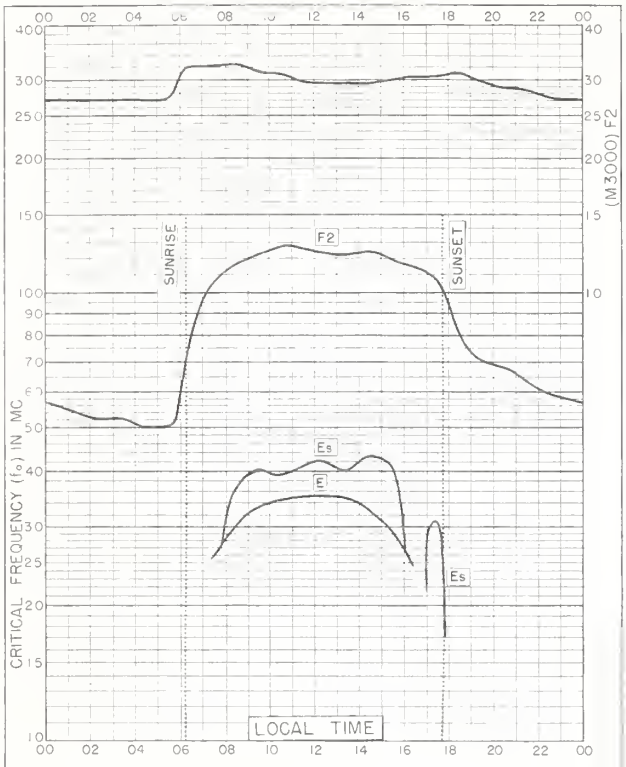


Fig. 93. AKITA, JAPAN
39.7° N, 140.1° E OCTOBER 1959

NBS 503

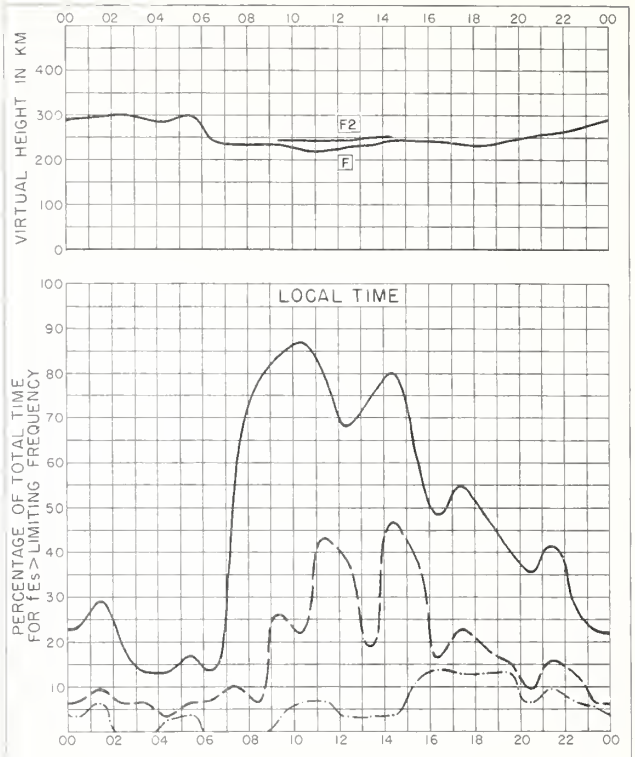


Fig. 94. AKITA, JAPAN OCTOBER 1959

NBS 490

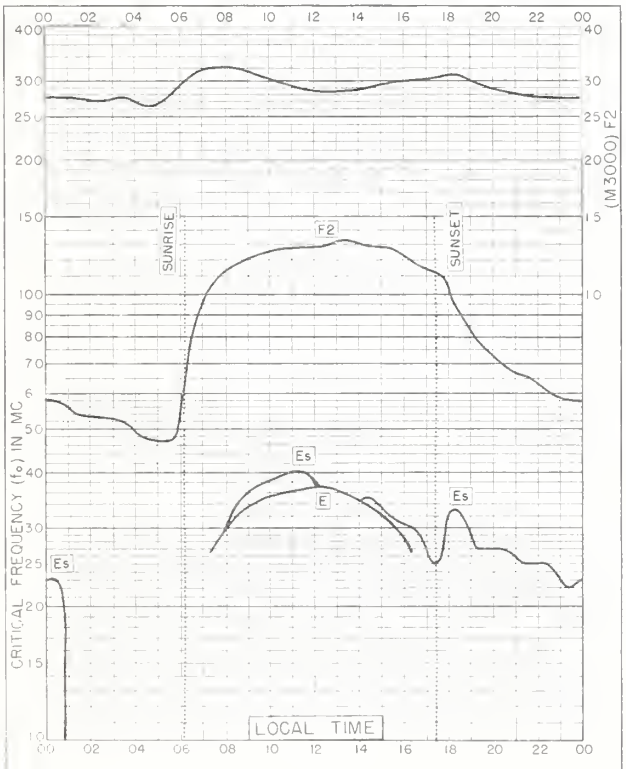


Fig. 95. TOKYO, JAPAN
35.7° N, 139.5° E OCTOBER 1959

NBS 503

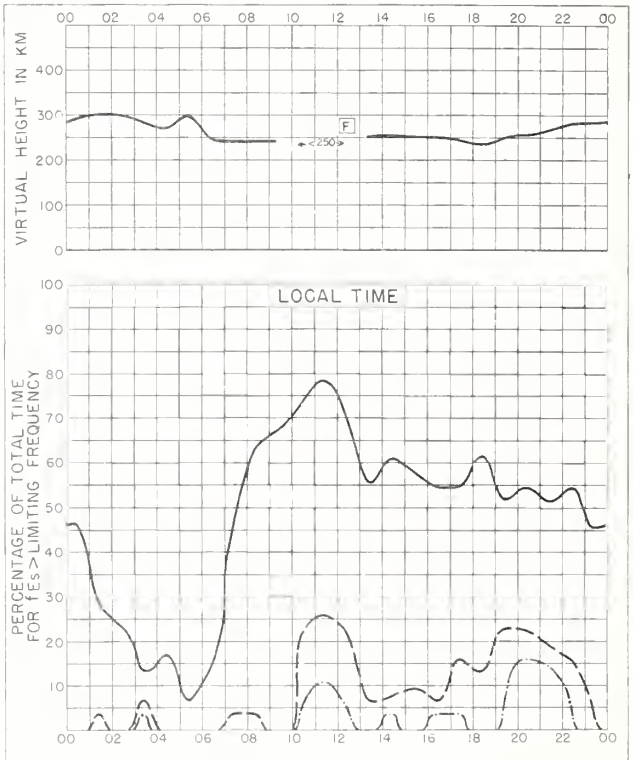


Fig. 96. TOKYO, JAPAN OCTOBER 1959

NBS 490

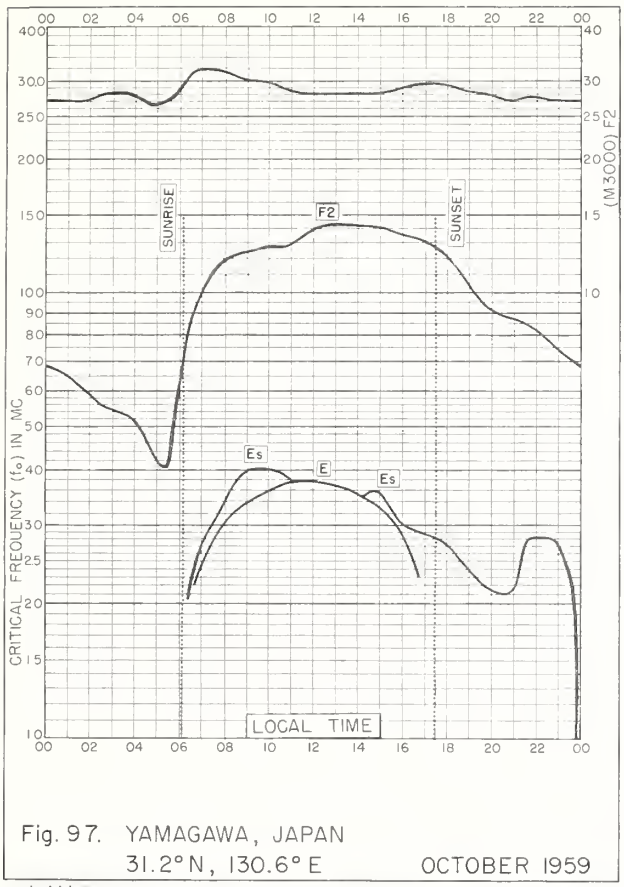


Fig. 97. YAMAGAWA, JAPAN
31.2°N, 130.6°E OCTOBER 1959

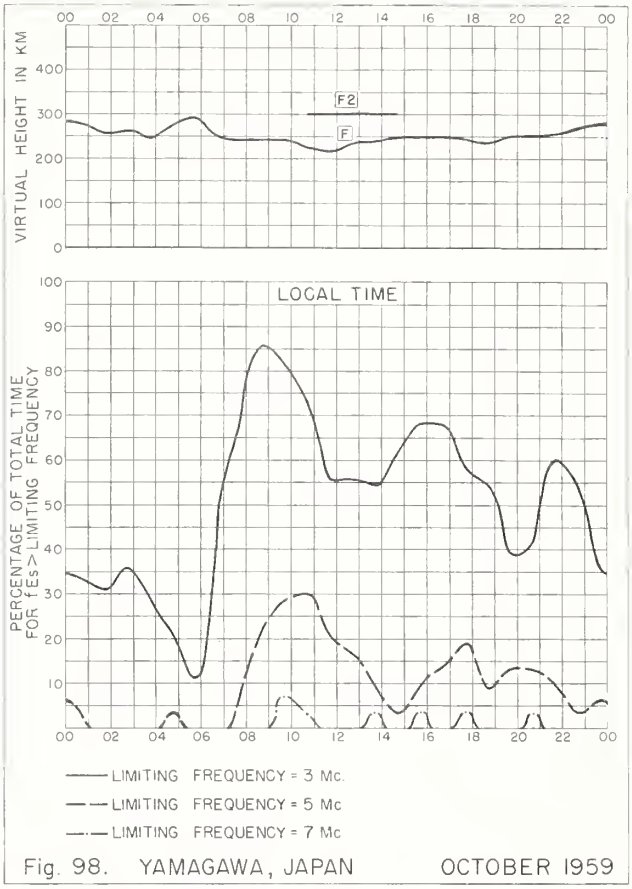


Fig. 98. YAMAGAWA, JAPAN OCTOBER 1959

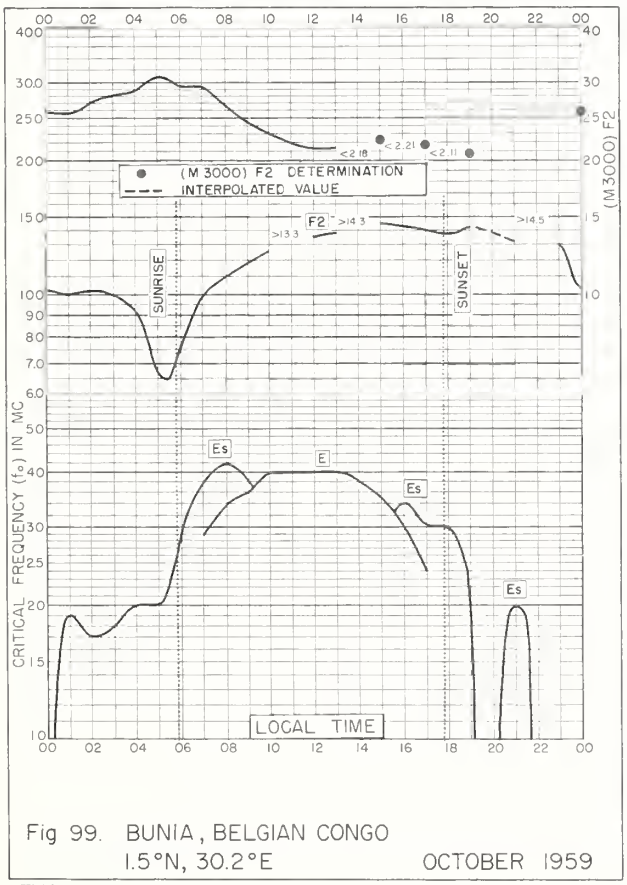


Fig 99. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E OCTOBER 1959

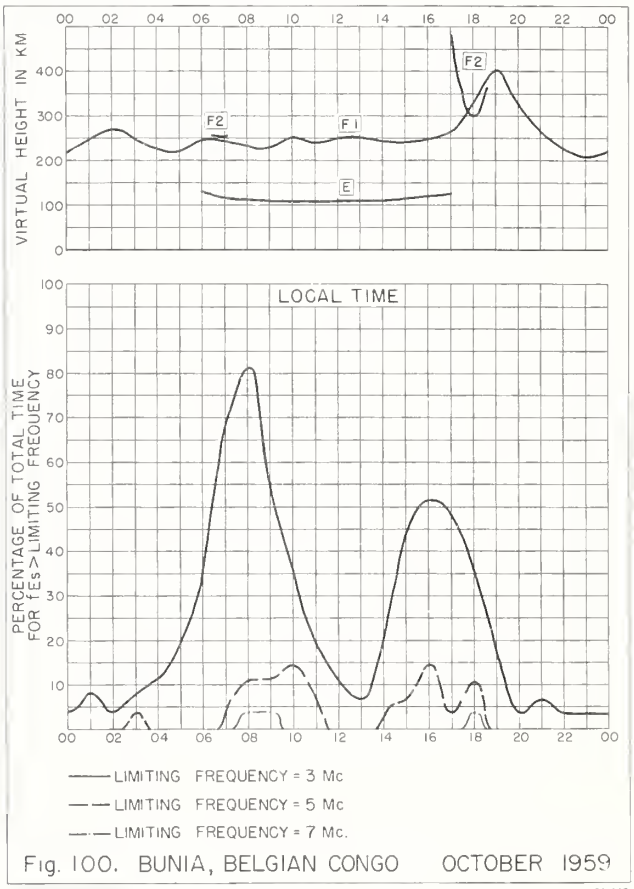


Fig. 100. BUNIA, BELGIAN CONGO OCTOBER 1959

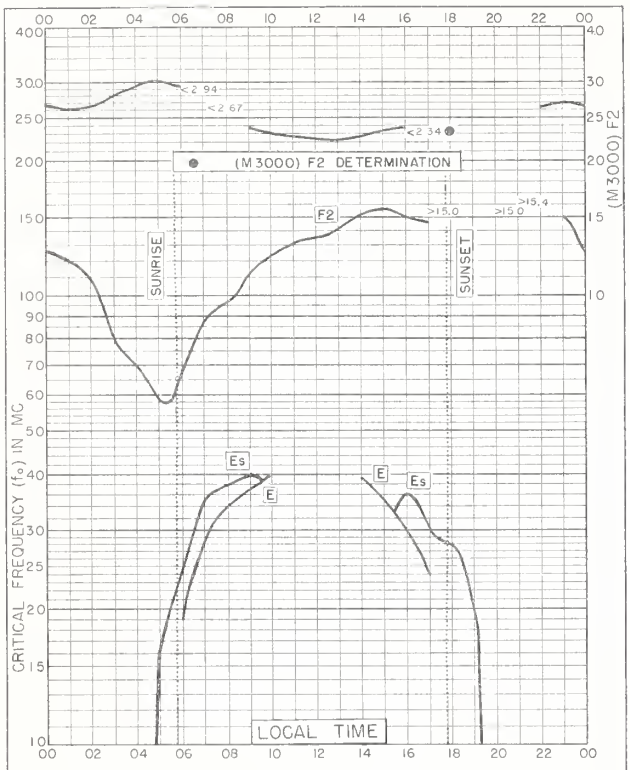
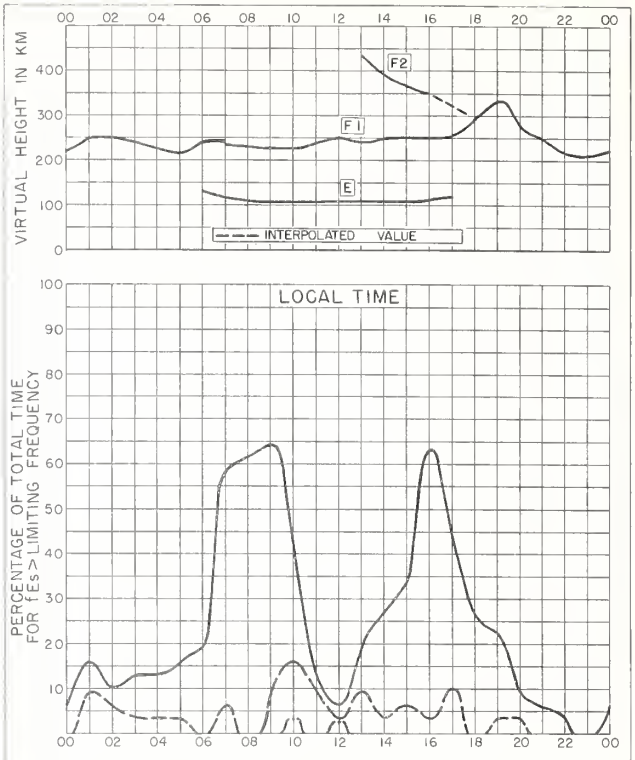


Fig. 101. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E OCTOBER 1959

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Fig. 102. LEOPOLDVILLE, BELGIAN CONGO

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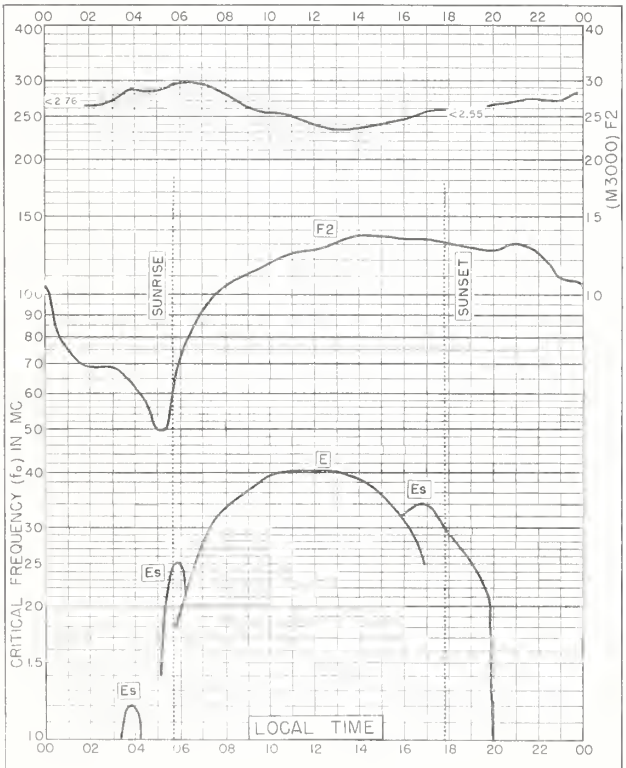
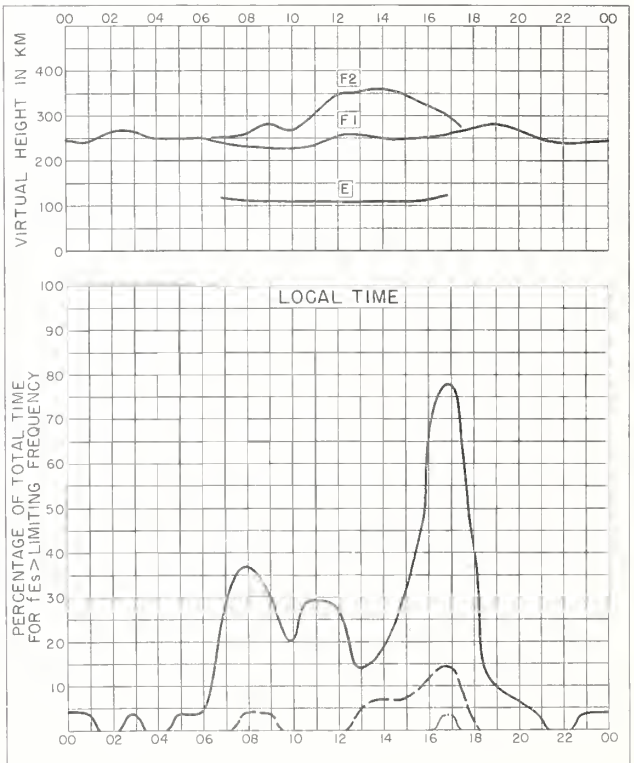


Fig 103. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E OCTOBER 1959

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Fig. 104. ELISABETHVILLE, BELGIAN CONGO

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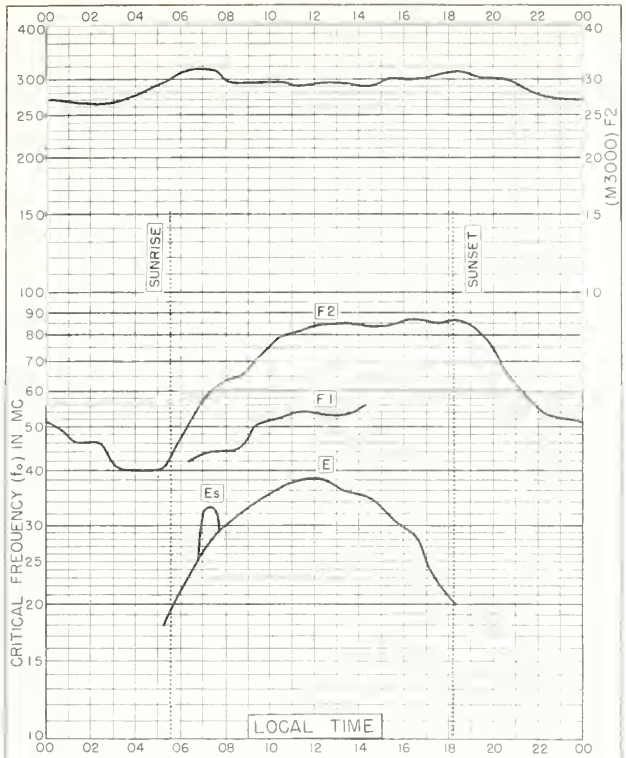


Fig 105. De BILT, HOLLAND
52.1° N, 5.2° E SEPTEMBER 1959

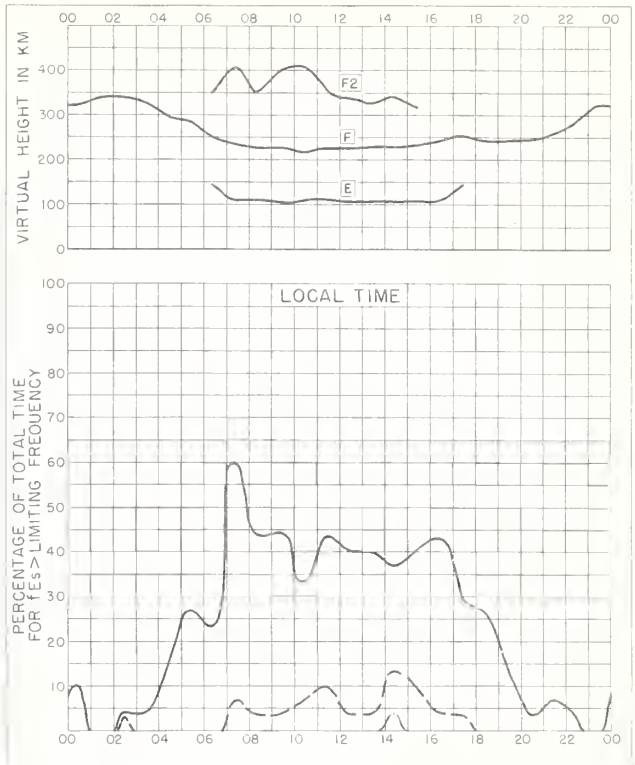


Fig. 106. De BILT, HOLLAND SEPTEMBER 1959

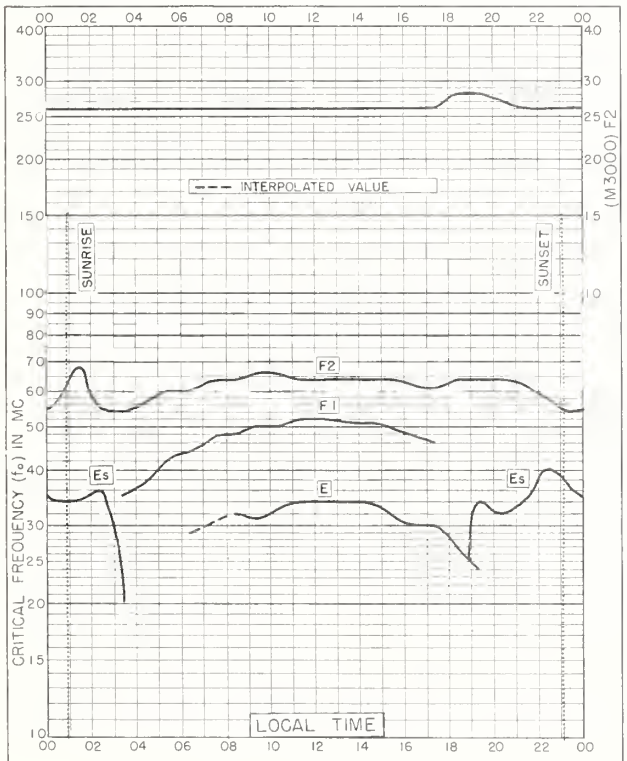


Fig. 107. KIRUNA, SWEDEN
67.8° N, 20.3° E JULY 1959

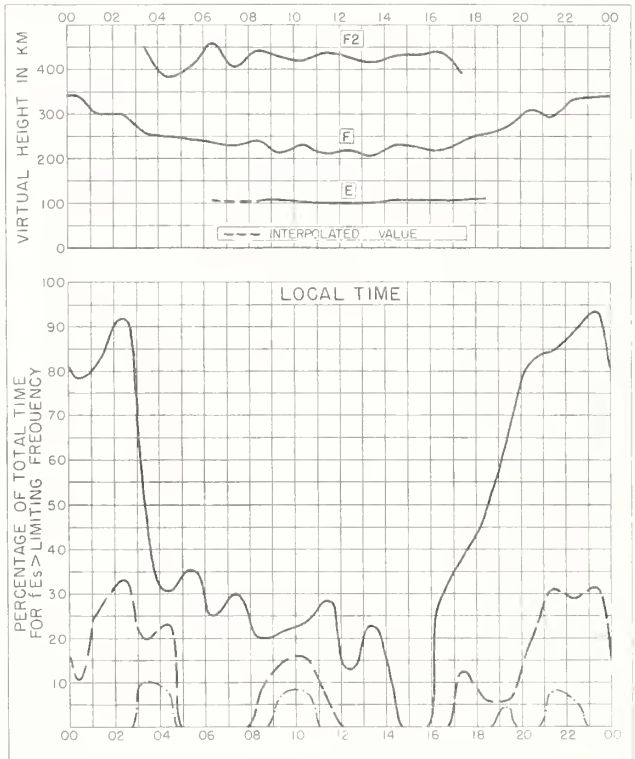


Fig 108. KIRUNA, SWEDEN JULY 1959

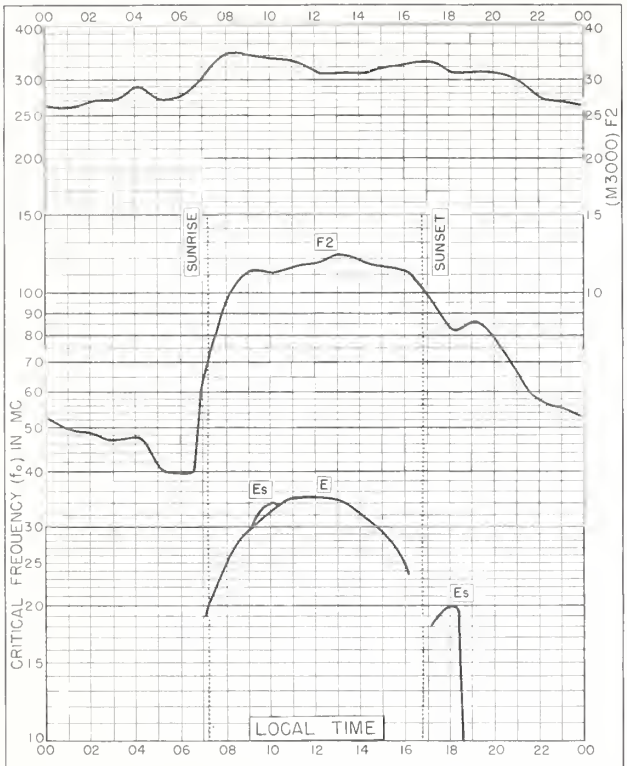


Fig. 109. CONCEPCION, CHILE
36.6°S, 73.0°W JUNE 1959

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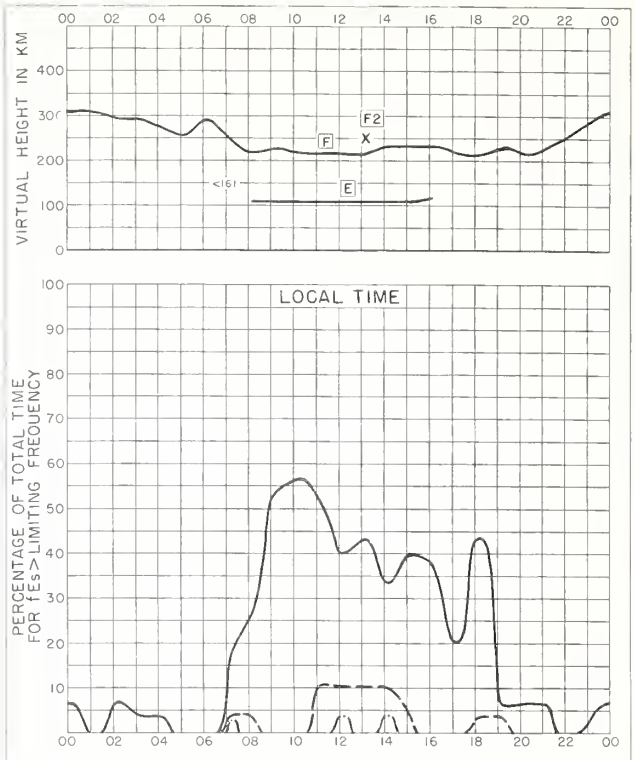


Fig. 110. CONCEPCION, CHILE JUNE 1959

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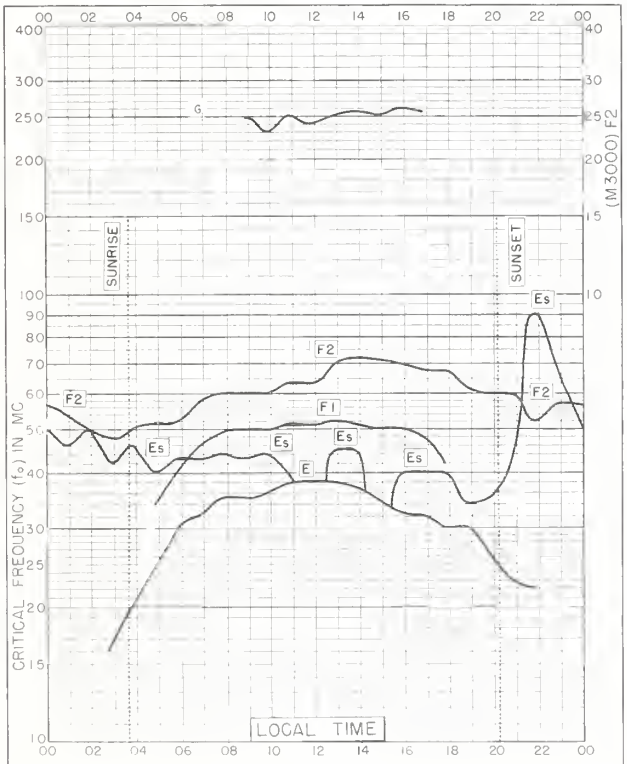


Fig 111. CHURCHILL, CANADA
58.8°N, 94.2°W MAY 1959

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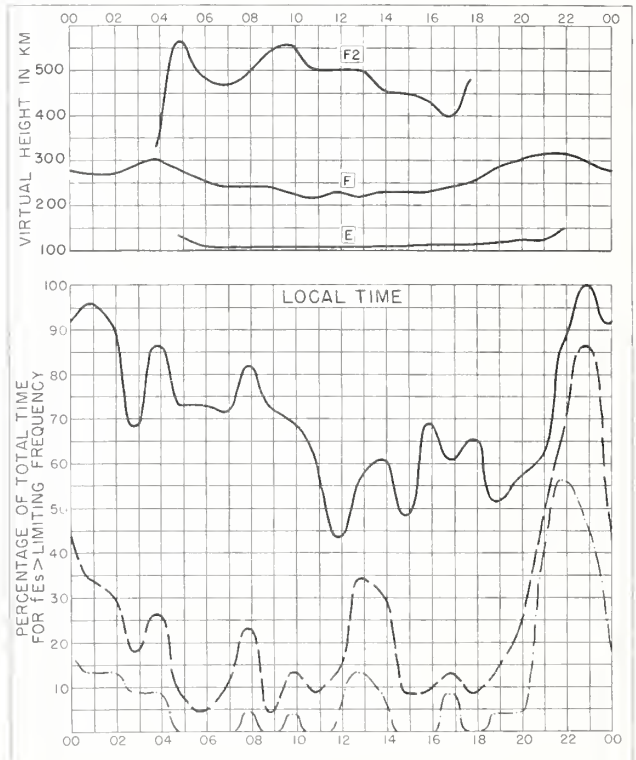


Fig 112. CHURCHILL, CANADA MAY 1959

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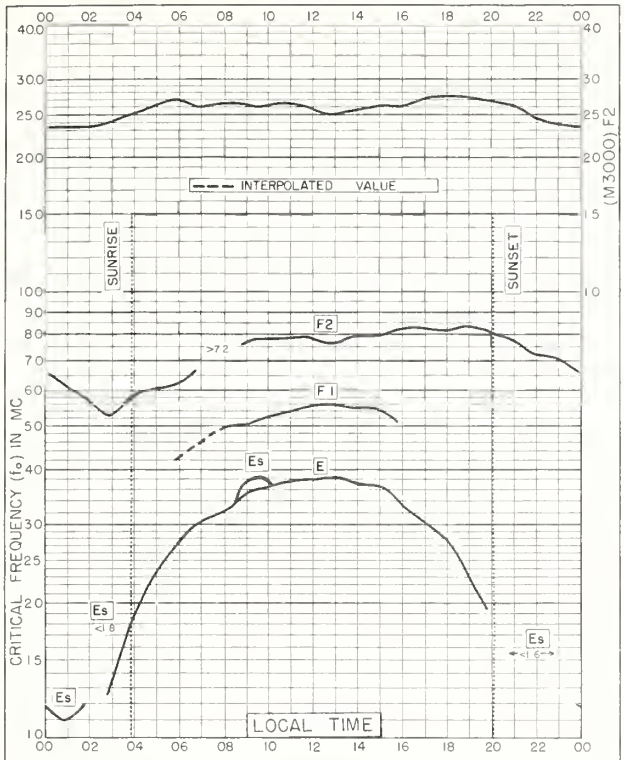


Fig. 113. INVERNESS, SCOTLAND
57.4°N, 4.2°W MAY 1959

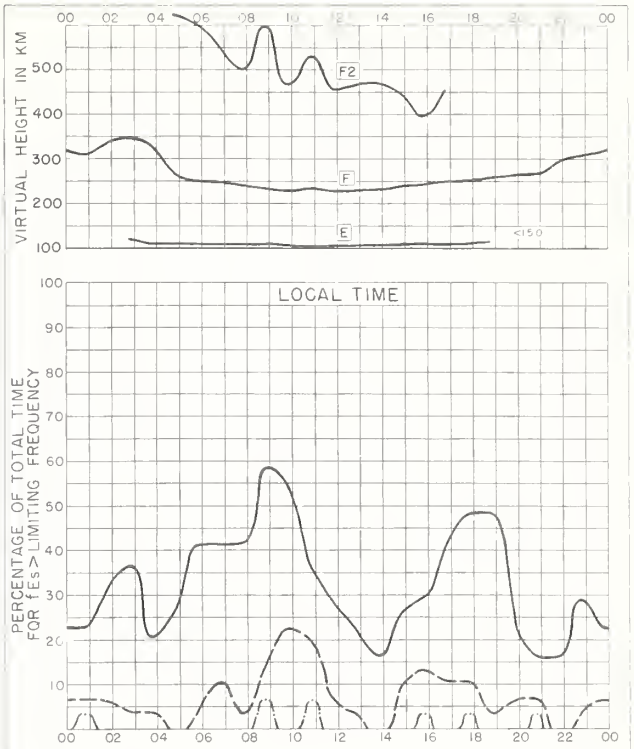


Fig. 114. INVERNESS, SCOTLAND MAY 1959



Fig. 115. KIRUNA, SWEDEN
67.8°N, 20.3°E APRIL 1959

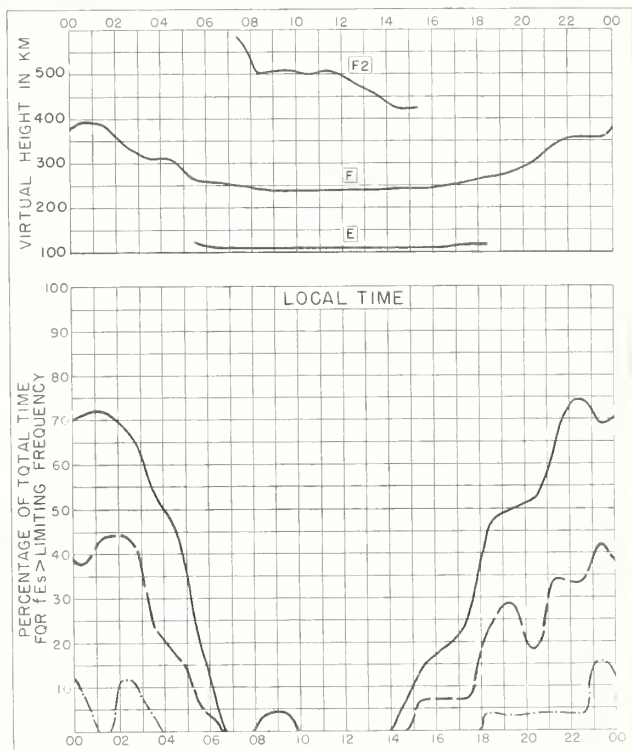


Fig. 116. KIRUNA, SWEDEN APRIL 1959

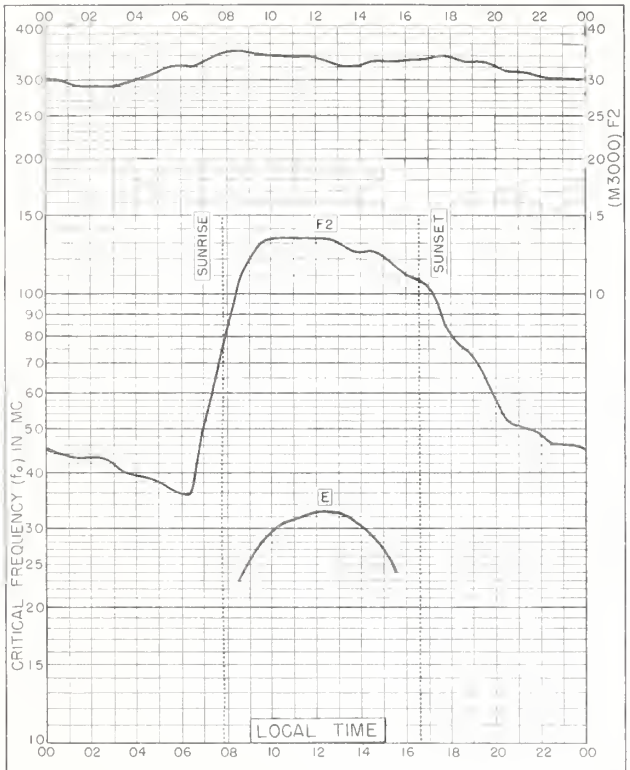
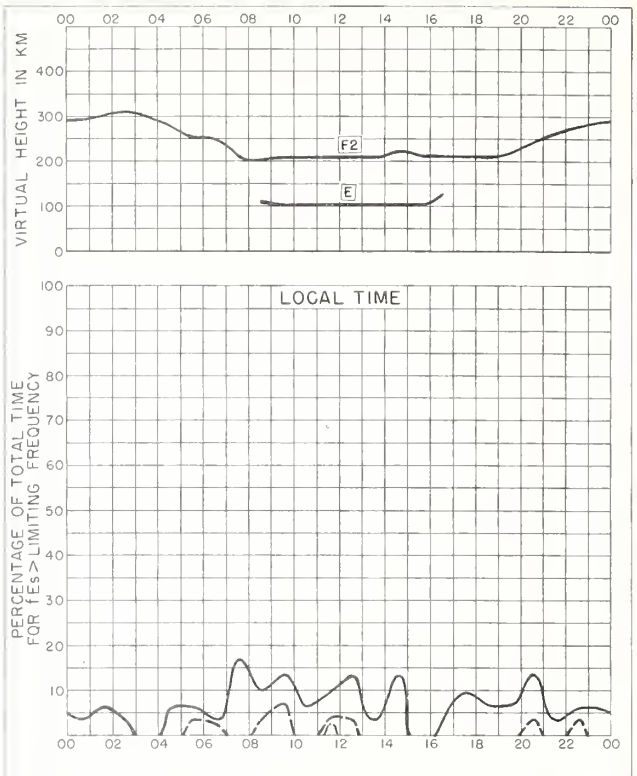


Fig. 117. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E JANUARY 1959

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Fig. 118. SCHWARZENBURG, SWITZERLAND

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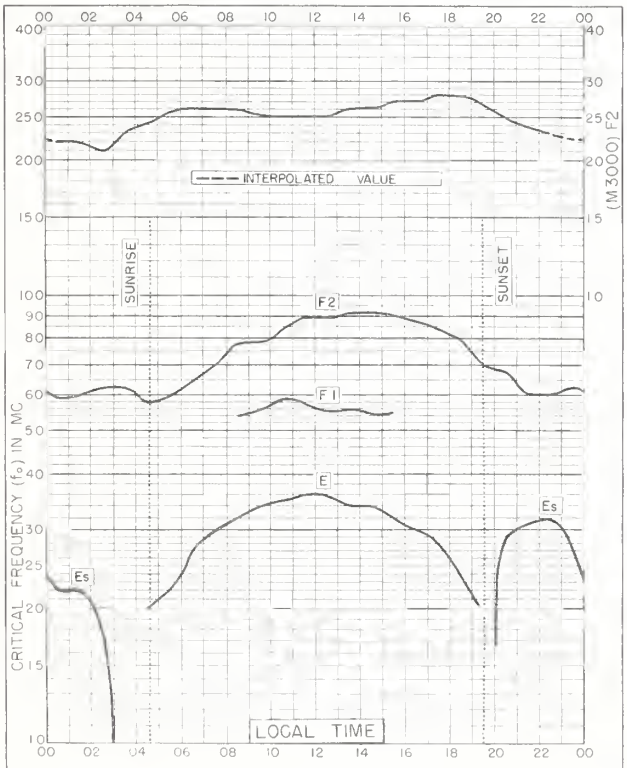


Fig. 119. LULEA, SWEDEN
65.6°N, 22.1°E APRIL 1958

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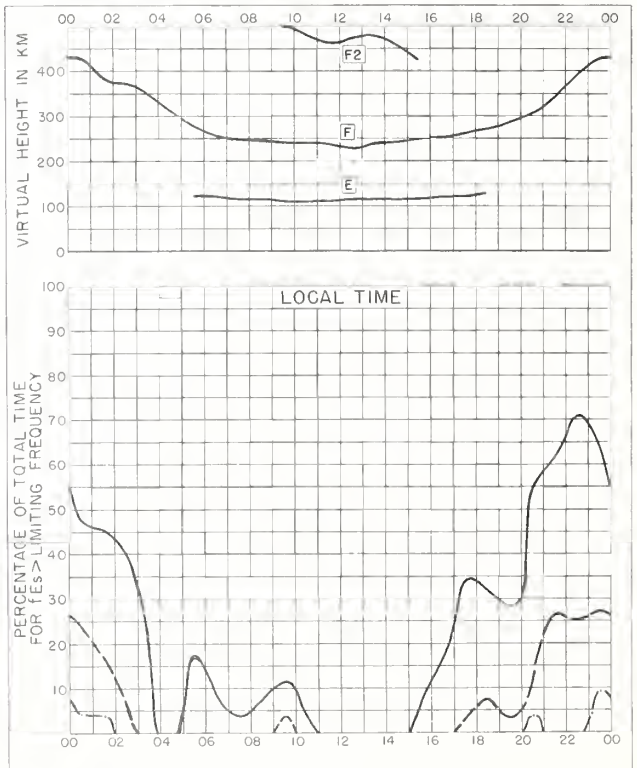


Fig 120. LULEA, SWEDEN APRIL 1958

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CRPL Reports

[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

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Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.

Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:

CRPL—J. North Atlantic Radio Propagation Forecast.

CRPL—Jp. North Pacific Radio Propagation Forecast.

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

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CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11—499—, monthly supplements to TM 11—499; Dept. of the Air Force, TO 31—3—28 series). On sale by Superintendent of Documents. Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.
Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data.

Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

The publications listed above may be obtained without charge from the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder Laboratories, Boulder, Colorado, unless otherwise indicated. Please note that the F series is not generally available.

Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation. $1.25.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.

NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 megacycles. 30 cents.

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These Circulars are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address the respective military office having cognizance of radio wave propagation.

Selected Technical Notes of the National Bureau of Standards:

NBS Tech. Note 2. PB151361. World Maps of F2 Critical Frequencies and Maximum Usable Frequency Factors. $3.50. PB151361–2. $3.50.

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